Nevada Bureau of Mines and Geology
Special Publication MI-2009

The Nevada Mineral Industry 2009

Contents

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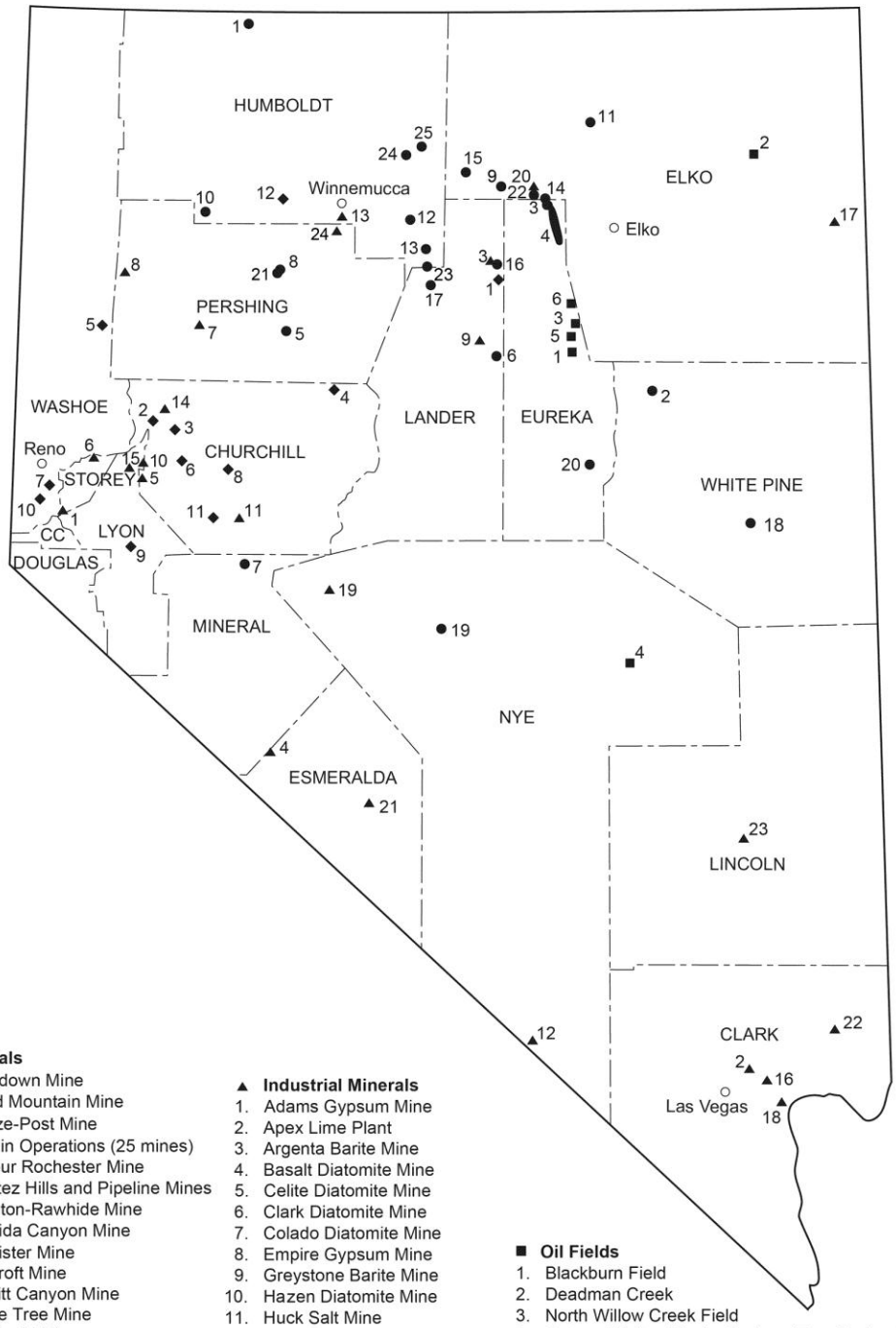

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Major mines, oil fields, and geothermal plants, 2009.

Overview

by Jonathan G. Price

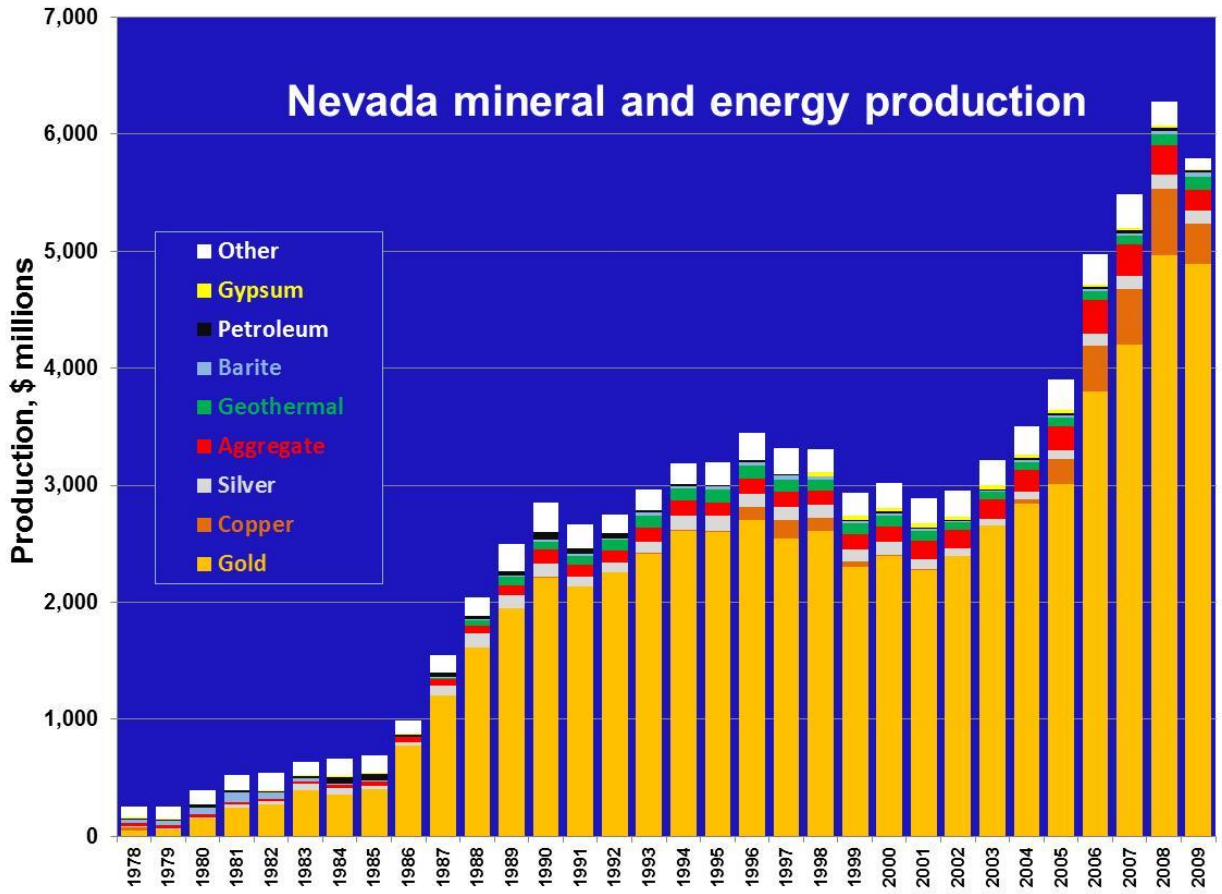
This report highlights activities through 2009 in metals, industrial minerals, geothermal energy, and petroleum. Numerous graphs and charts are incorporated for rapid inspection of trends in production and price. The value of overall mineral and energy production in Nevada dropped from the all-time high of $6.26 billion in 2008 to $5.79 billion in 2009. Gold production has more or less steadily decreased from a high of 8.86 million ounces in 1998 to 5.0 million ounces in 2009, but 2009 was nonetheless the 21st consecutive year with production in excess of 5.0 million ounces. Nevada led the nation in the production of gold and barite, and was the only state that produced magnesite, lithium, and the specialty clays, sepiolite and saponite. Other commodities mined and produced in Nevada in 2009 included copper, construction aggregate (sand, gravel, and crushed stone, including limestone and dolomite), silver, geothermal energy, gypsum, petroleum, lime (produced from limestone and dolomite), cement (produced from limestone, clay, gypsum, and iron ore), silica (industrial sand), diatomite, clays, molybdenum, perlite, iron ore, dimension stone, salt, semiprecious gemstones (turquoise and opal), and mercury (as a byproduct of gold and silver processing). Locations of many of the sites mentioned in the text of this report are shown on NBMG map E-49, *Nevada Active Mines and Energy Producers,* which is available at www.nbmg.unr.edu/dox/e49.pdf.

MINERAL, GEOTHERMAL POWER, AND PETROLEUM PRODUCTION IN NEVADA[1]

	2008 (revised)		2009		% change from 2008 to 2009	
Commodity	**Quantity**	**Value** (millions)	**Quantity**	**Value** (millions)	**Quantity**	**Value**
Gold (thousand troy ounces)	5,698	$4,968.2	5,033	$4,893.7	-11.7	-1.5
Silver (thousand troy ounces)	7,965	119.4	7,310	107.3	-8.2	-10.2
Copper (thousand pounds)	175,538	568.7	145,733	345.4	-17.0	-39.3
Aggregate (thousand short tons)	43,400	256.1	28,740	193.5	-33.8	-24/4
Barite (thousand short tons)	595	26.5	476	38.8	-19.9	+46.5
Gypsum (thousand short tons)	1,152	15.3	983	12.1	-14.7	-21.0
Geothermal energy (thousand megawatt-hours)	1,383	95.1	1,669	110.8	+20.7	+16.5
Petroleum (thousand 42-gallon barrels)	436	33.3	455	21.8	+4.3	-34.5
Other minerals[2]	-----	207.2	-----	86.9	-----	-58.0
Total	-----	$6,289.8	-----	$5,810.3	-----	-7.8

[1]Production as measured by mine shipments, sales, or marketable production (including consumption by producers); compiled by the Nevada Division of Minerals and the Nevada Bureau of Mines and Geology. Products milled or processed in Nevada but mined from deposits in California are excluded. Specifically, zeolite from the Ash Meadows plant in Nye County is not included in these totals.

[2]Building stone, cement, clay, diatomite, lime, lithium, magnesite, mercury, molybdenum, iron ore, perlite, salt, and silica sand.



For the first time since 1999, Nevada ranked first in the United States in terms of value of overall nonfuel (excluding oil, gas, coal, uranium, and geothermal) mineral production in 2009 (according to the U.S. Geological Survey, Mineral Commodity Summaries 2010, http://minerals.usgs.gov/minerals/pubs/mcs/2010/mcs2010.pdf). Arizona dropped to second place because of lower copper prices. Utah, a major producer of copper and molybdenum, primarily from one mine near Salt Lake City, was third. California, with its large population and commensurate demands for construction raw materials, was fourth. Texas, another populous state and major producer of construction raw materials, was fifth. Alaska, the leading state in zinc and silver production, was sixth. Florida, the leader in phosphate production, was seventh.

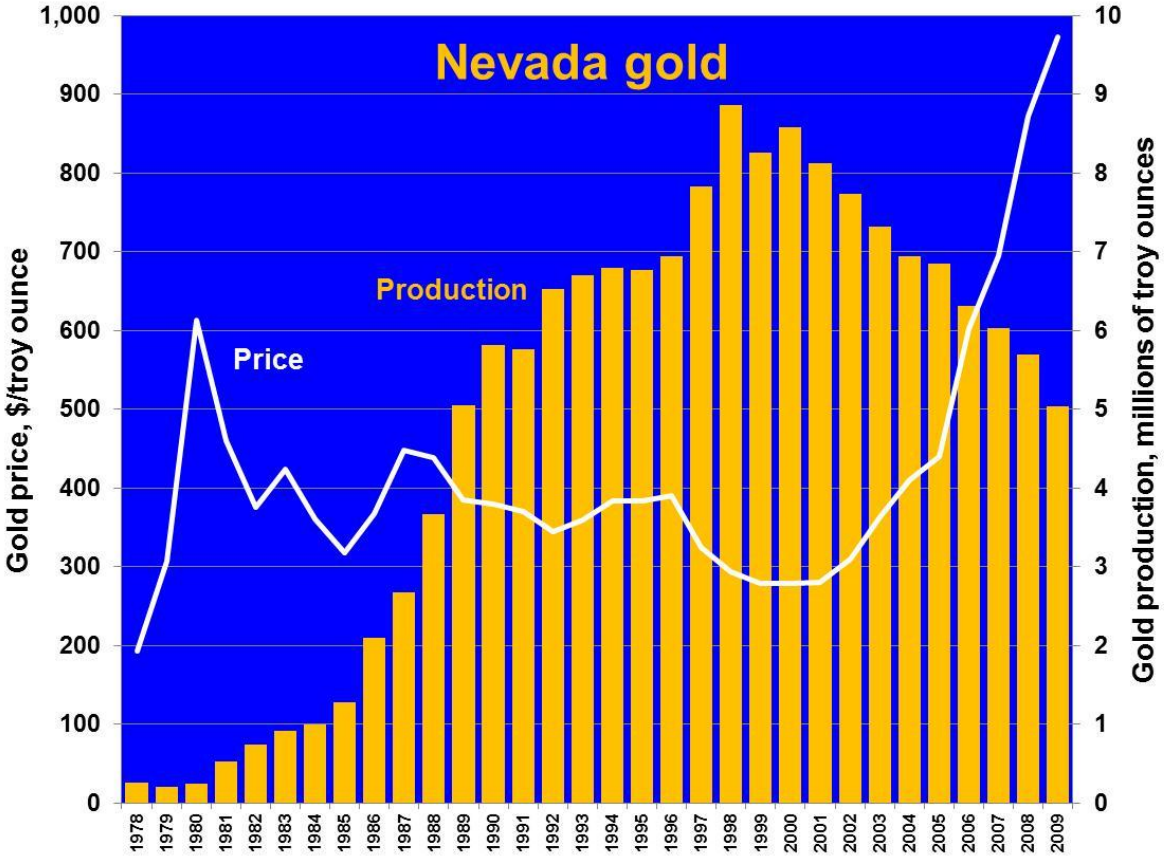
Nevada's production of gold, valued at $4.9 billion, was 75% of the U.S. total and helped make the U.S. the third leading gold producer in the world in 2009. Nevada alone accounted for 7% of world production of gold. China, Australia, South Africa, Russia, and Peru each produced more gold than the state of Nevada in 2009. Second to gold in terms of Nevada's mineral value in 2009 was copper ($345 million), followed by construction aggregate ($175 million). Electrical power from geothermal energy

production in Nevada in 2009 was valued at $111 million; its 17% increase in value resulted from an increases in production (21%). Silver, chiefly a byproduct or co-product of gold production, ranked as the fifth leading mineral commodity in 2009, with a value of $107 million.

The contributions that mining makes to the economies of Nevada and the U.S. are significant in terms of jobs, commerce, taxes, improvements to the infrastructure, and lowering of the U.S. trade deficit. Because of Nevada's production, the U.S. is a net exporter of gold, most of which is sold on the international market for bullion, jewelry, and arts, and some of which is sold for its conductive and non-corrosive qualities in computers and other electronics, for its heat-reflecting quality as a coating on windows, and for use in dental work.

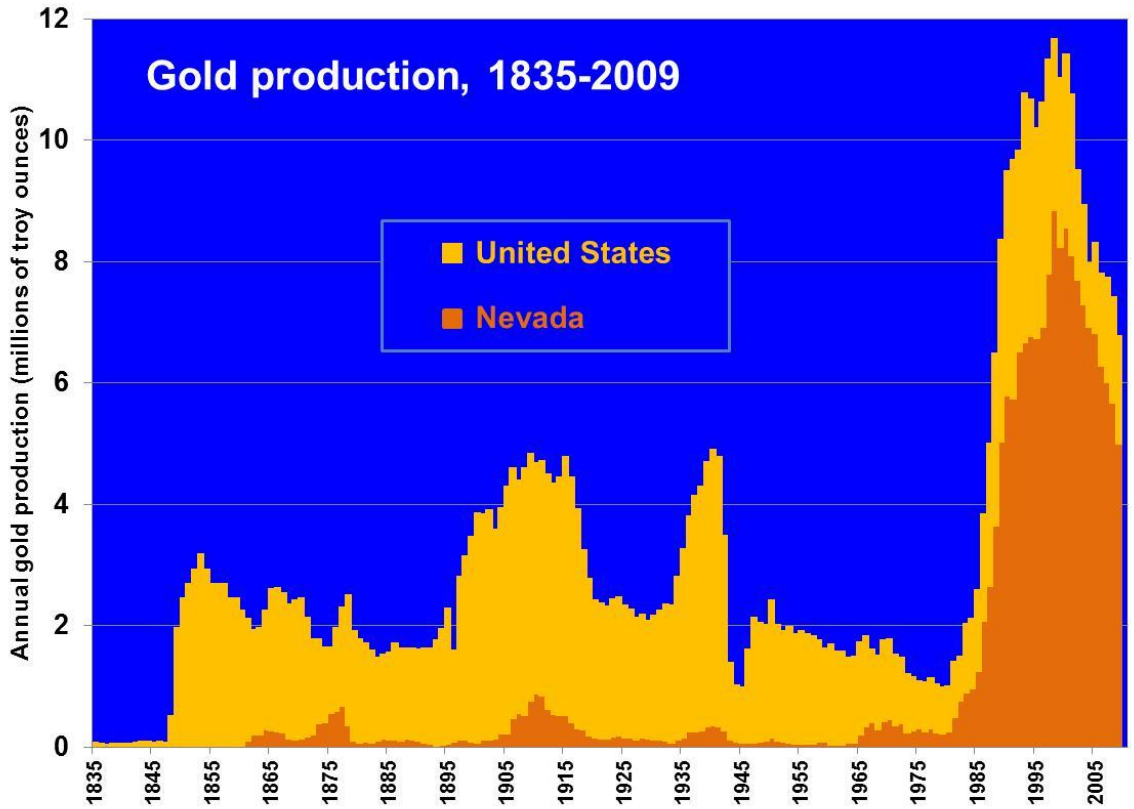
Through a survey conducted early in 2010, the Nevada Division of Minerals (NDOM) collected data for Nevada Bureau of Mines and Geology Special Publication P-21, *Major Mines of Nevada 2009*. This publication includes, in handbook form, location maps, names and telephone numbers of operators, numbers of employees, and nonproprietary production figures for most mines in Nevada. It also contains a section on economic impacts of the industry. The full contents are available free of charge on the World Wide Web (www.nbmg.unr.edu), as are the contents of this report. The data from the NDOM survey are used in this publication and, along with information from other sources, will be used to update, revise, and check preliminary statistics collected and released by the U.S. Geological Survey.

The section on **Metals** and the tables of **Major Precious-Metal Deposits** and **Other Metallic Deposits** provide details on new deposit discoveries, new mine openings, mine closures, additions to reserves, and mine expansions. As has been the case in recent years, gold continues to be the leading commodity produced in Nevada. Production of gold in 2009 came from 20 major mining operations. The Carlin trend in northeastern Nevada accounted for 50% of the total production. Eight additional mining operations, not on the Carlin trend, each produced over 100,000 ounces of gold from mostly multimillion-ounce deposits.



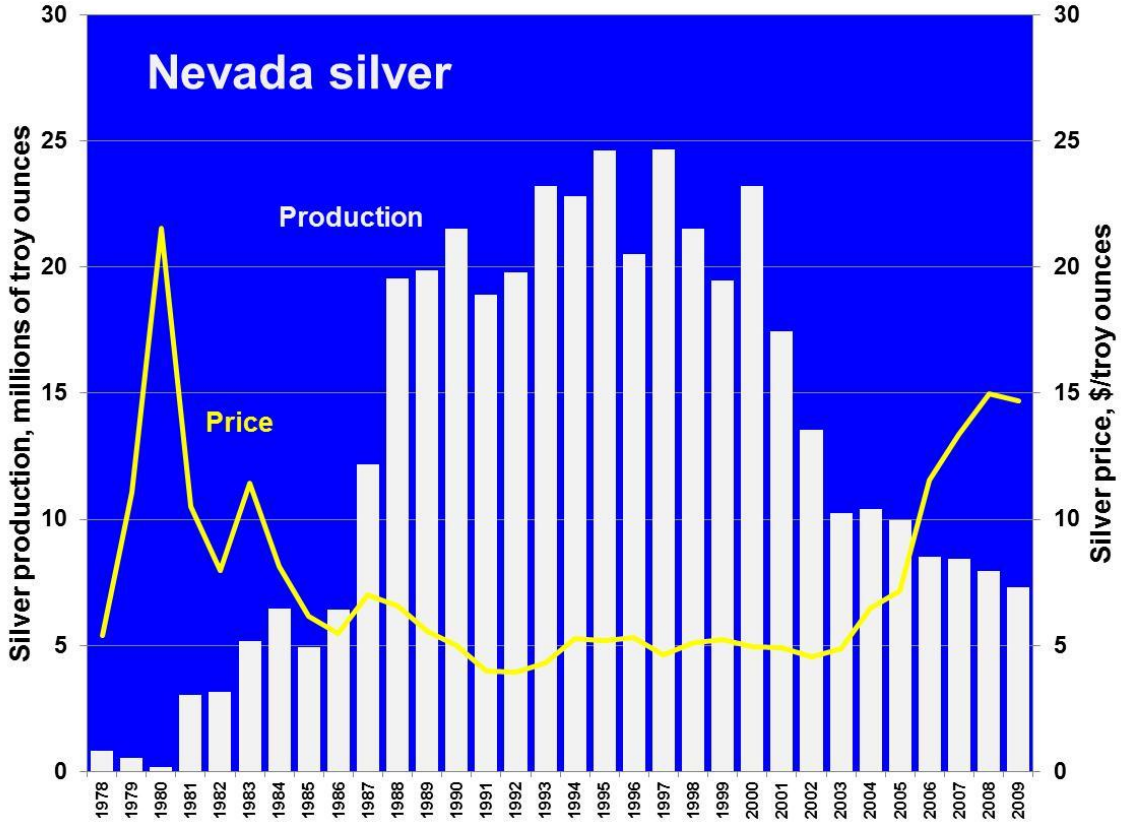
Nevada and the U.S. have produced a significant portion of world gold. The U.S. Geological Survey estimates that total world gold production, since the beginning of civilization, has been approximately 162,000 metric tons (5.2 billion troy ounces). Interestingly, about 85% of that gold is still in use (in bullion, coins, jewelry, electronics, etc.), and most gold currently being used is recycled. Through 2009, cumulative gold production in Nevada (beginning with the Comstock Lode in 1859) stands at 5,803 metric tons (186.56 million ounces). Remarkably, 87% of this total has been produced since the Carlin Mine began production in 1965; 84% of this total has been produced during the current boom from 1981 to the present; and 37% of this total has been produced in the decade from 2000 to 2009. Total U.S. production, primarily since 1835, is approximately 16,900 metric tons (544 million ounces or slightly more than 10% of total world gold production), and total Nevada production is 3.6% of total world production. The Carlin trend alone accounts for 1.4% of all the gold ever mined in the world. By the end of 2009, cumulative production from the Carlin trend reached 2,306 metric tons of gold (74.1 million ounces), assuring its place as one of the most productive gold-mining districts in the world.

Nevada continues to be in the midst of the biggest gold boom in U.S. history, as the graph of historical U.S. gold production illustrates. The recent surge in production in the U.S. is largely the result of discoveries of Carlin-type gold deposits and other deposits in which gold occurs primarily in grains that are too small to be visible to the naked eye. These deposits are mostly in Nevada. The U.S. production so far in the current boom, the period from 1981 to 2009, has been 224 million ounces. This is significantly greater than the total U.S. production during the era of the California gold rush (1849 to 1859, with 29 million ounces, although some estimates of unreported production may bring that figure up to 70 million ounces); the Comstock (Nevada) era from 1860 to 1875 (with 34 million ounces); and the period from 1897 to 1920, when Goldfield (Nevada), the Black Hills (South Dakota), Cripple Creek (Colorado), and byproduct gold production from copper mines in Arizona and Utah contributed to cumulative production of 95 million ounces. U.S. production in the decade from 2000 through 2009 alone was 86 million ounces. The current boom is bigger than previous booms not only in terms of cumulative production but also in terms of peak annual production (11.6 million ounces in 1998 versus 4.8 million ounces in 1909, 2.6 million ounces in 1866, and 3.1 million ounces in 1853) and duration (at least 30 years for the current boom versus no more than 24 years for any of the earlier booms).

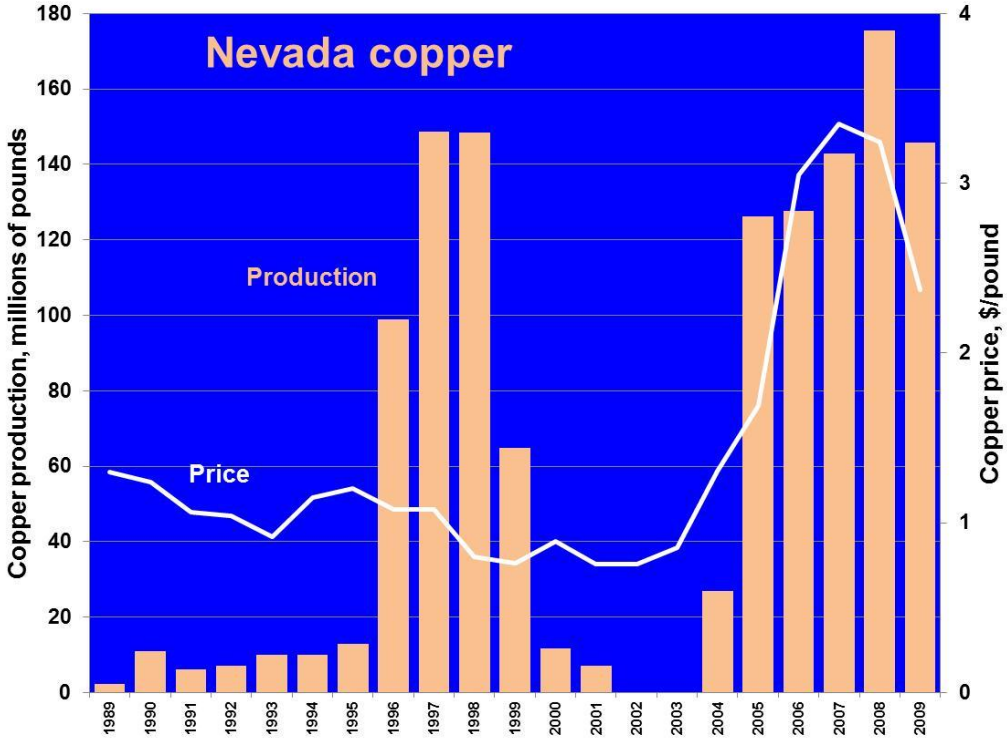


In 2009, Barrick Gold Corporation's Betze-Post Mine in Eureka County produced 1.17 million ounces, making it the most productive gold mine in the state. Barrick was the largest gold-producing company in Nevada in 2009 both on the Carlin trend (1.335 million ounces) and statewide (2.44 million ounces). Newmont Mining Corporation's production on the Carlin trend totaled 1.173 million ounces, helping to make it the second largest gold producer in Nevada. Combined, Barrick and Newmont accounted for 89% of Nevada gold production in 2009. Barrick significantly ramped up production from its Cortez Hills deposit in Lander County, a multimillion-ounce gold deposit that was discovered in 2004 and put into production in 2008.

Much of Nevada's silver production in 2009, which totaled 7.3 million ounces, was a co-product or byproduct of gold mining. With a ratio of value (average price of gold to average price of silver) of 66:1 in 2009, only those deposits with more than 66 times as much silver as gold can be considered primary silver deposits. Only one such deposit operated in Nevada in 2009—the Coeur Rochester Mine in Pershing County (with a silver-to-gold production ratio of 173:1 and total silver production of 2.2 million ounces). It produced 30% of Nevada's silver in 2009, all from residual leaching; no new ore was mined there in 2009. Nevada's production in 2009 accounted for 18% of the U.S. total and 1.1% of the world total.

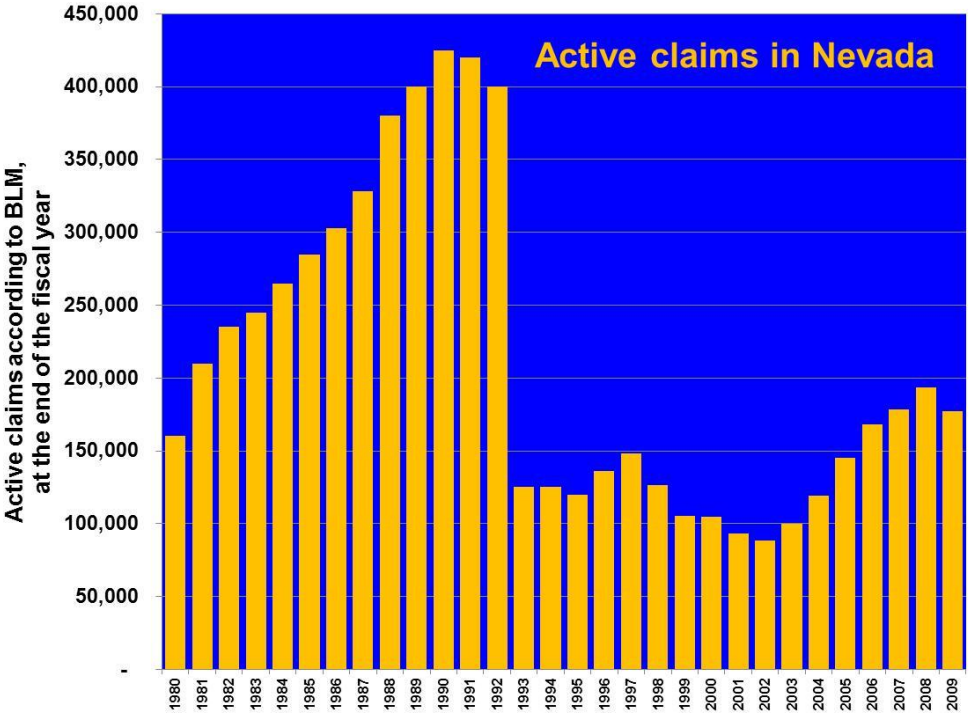


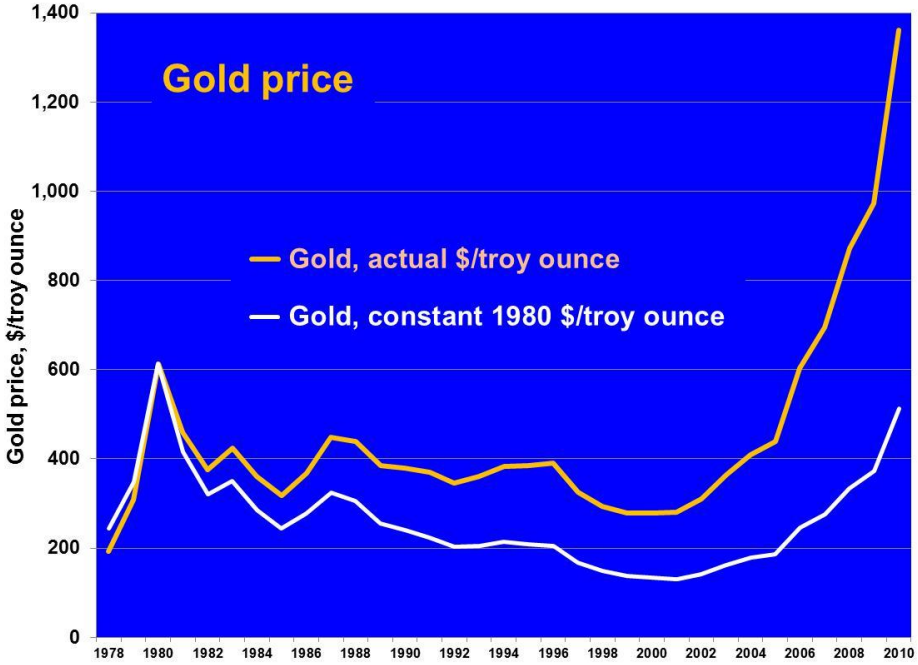
Copper production, dominated by the Robinson copper-gold-silver mine, operated by Quadra Mining Ltd. near Ely in White Pine County, was enhanced by byproduct copper at Newmont's Phoenix project near Battle Mountain in Lander County. Golden Phoenix's molybdenum production from its Ashdown Mine in northwestern Humboldt County declined from 2008 to 2009, but the mine reopened in 2009 after being placed on care and maintenance late in 2008 due to lower metal prices.



Exploration activity in 2009 (summarized in the section on **Metals**) decreased in 2009 relative to 2008, because of the difficulty of obtaining financing during the economic recession. Whereas 68 companies (58 junior companies and 10 mid-tier or major companies) drilled 123 projects in Nevada in 2008, 35 companies (23 juniors and 12 mid-tier to majors) drilled 64 projects in 2009. The number of active claims on public lands also decreased, as did the number of new claims filed in 2009, relative to 2008.

Most exploration focused on gold, which maintained high prices throughout the year, and some exploration continued for copper, molybdenum, silver, lithium, limestone for cement, diatomite, and uranium. The average gold price in 2009 was $972 per ounce, well above prices in the previous eight years (rising steadily from a low of $280 in 2001 to $872 in 2008). Gold's continued rise in price in 2010 and an improving global economy should stimulate exploration. The gold price has reached historically high values in recent years, and it is approaching an inflation-adjusted all-time high.





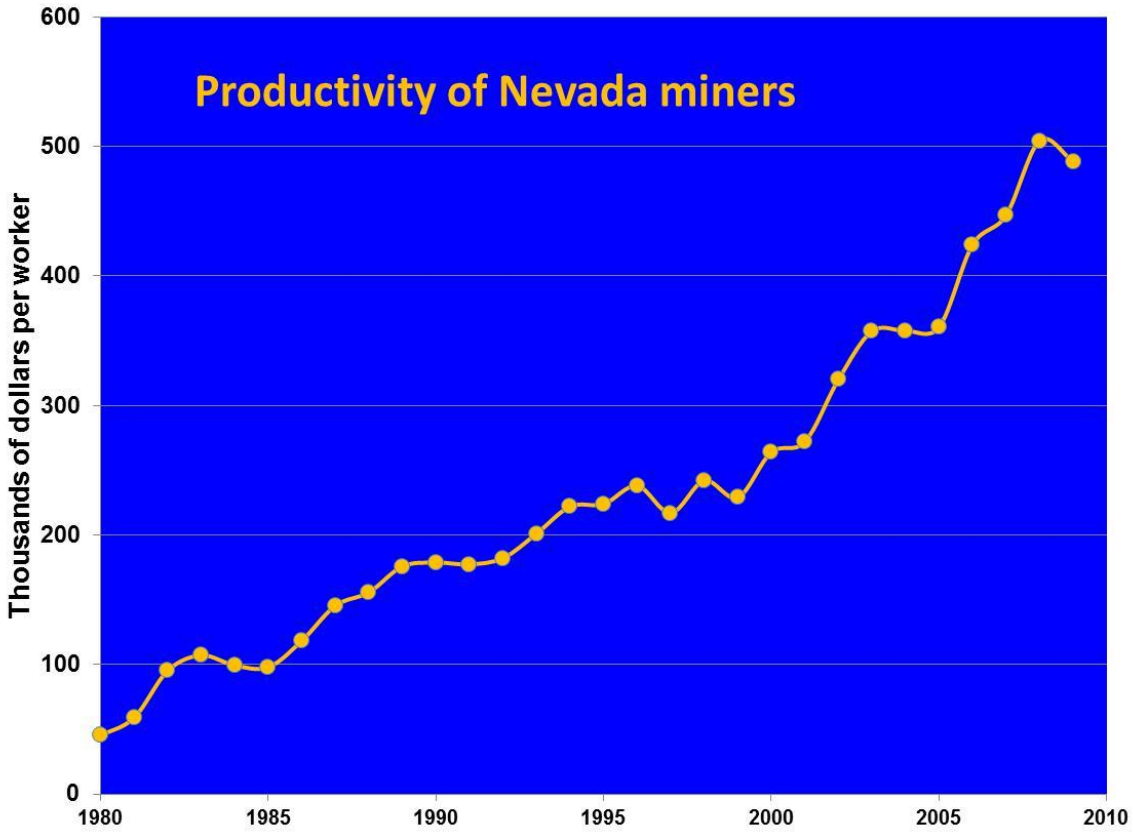
New discoveries and promising drilling results were reported in several districts. To help guide exploration for concealed deposits below alluvial or young volcanic cover, geologists are successfully employing various geophysical methods (seismic, electrical, magnetic, gravity). Exploration activity, including new claims staked, was reported in most of Nevada's 17 counties. Advanced exploration projects at previously delineated deposits show promise for major developments, particularly in the Yerington district in Lyon County (at the Pumpkin Hollow copper-iron deposits and at the Ann Mason and

MacArthur copper deposits) and at the Mount Hope molybdenum deposit in Eureka County and the Liberty molybdenum deposit in Nye County.

According to a survey of exploration activities by the Nevada Division of Minerals (D. Driesner and A.R. Coyner, 2009, Nevada Exploration Survey 2009, available at http://minerals.state.nv.us/), exploration activity in Nevada in 2009 declined significantly from 2008. The 20 companies responding to the survey reported spending $110.9 million on exploration in Nevada in 2009, less than the $158.1 million reported by 22 companies in 2008 or the $167.9 million reported by 31 companies in 2007, but well above the level of $51.2 million in 2001. Perhaps as a result of the rise in gold prices and easing of exploration financing as the economy shows signs of recovery, the companies were more optimistic about Nevada's potential than they were the previous year, and they reported that they planned to spend more, $154 million in 2010. Because of its favorable geology for high-priced mineral commodities and because of its regulatory climate, Nevada continues to attract a large portion of the worldwide exploration expenditures of the companies actively exploring in Nevada.

The announced gold resources in Nevada, including mineable reserves and perhaps some subeconomic resources (as reported in announcements by companies, with deductions for production), are enough to sustain gold production at multimillion-ounce levels for at least 20 years, assuming stable prices. The term "reserve" has special meaning with regard to U.S. securities laws. To be called a reserve, the deposit must be able to be mined profitably. With relatively high gold prices and continued technological improvements, some of the subeconomic resources of previous years have been upgraded to reserves. The Nevada Division of Minerals reported that the mining industry held 65.2 million ounces in gold reserves at the end of 2009, enough to sustain production at current levels for about 13 years.

Productivity of Nevada mining operations is exceptionally high. Measured simply by the value of the commodities produced divided by the number of employees, productivity of Nevada miners is outstanding. On the average, each of the workers in the nonfuel mineral industry in Nevada produced approximately $489,000 in mined products in 2009, close to the all-time high of $504,000 reached in 2008.



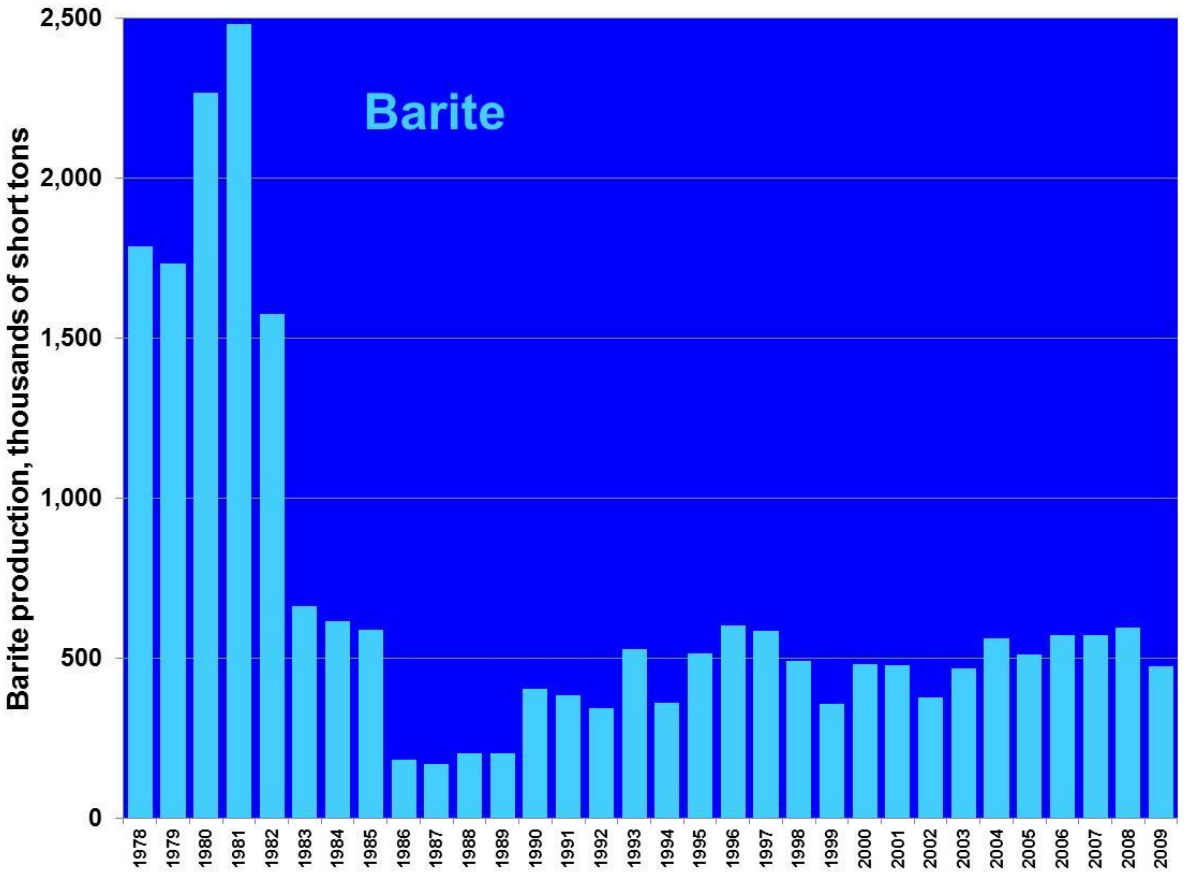
Challenges that face the precious metal mines in Nevada include:

- Economic, safety, and environmental concerns, particularly uncertainty in metal prices
- The ability to replace mined-out reserves through “greenfield” and “brownfield” exploration, that is, in areas without and with previous mining, respectively
- Obtaining financial assurances (bonds) for reclamation and closure
- Sustaining local economies when, sometime in the future, mining ceases
- Hazards of underground mining
- Possible regulatory and mining-law changes
- The length of time that it typically takes to obtain permits
- Preservation of archaeological and ecological resources
- Treating refractory (iron sulfide- and/or carbon-bearing) ores, including innovative ways to oxidize these ores and to recover gold-bearing pyrite by flotation
- Dewatering mines
- Predicting the ultimate chemical compositions of pit lakes
- Procedures for closure of heaps used for leaching gold and silver from ore

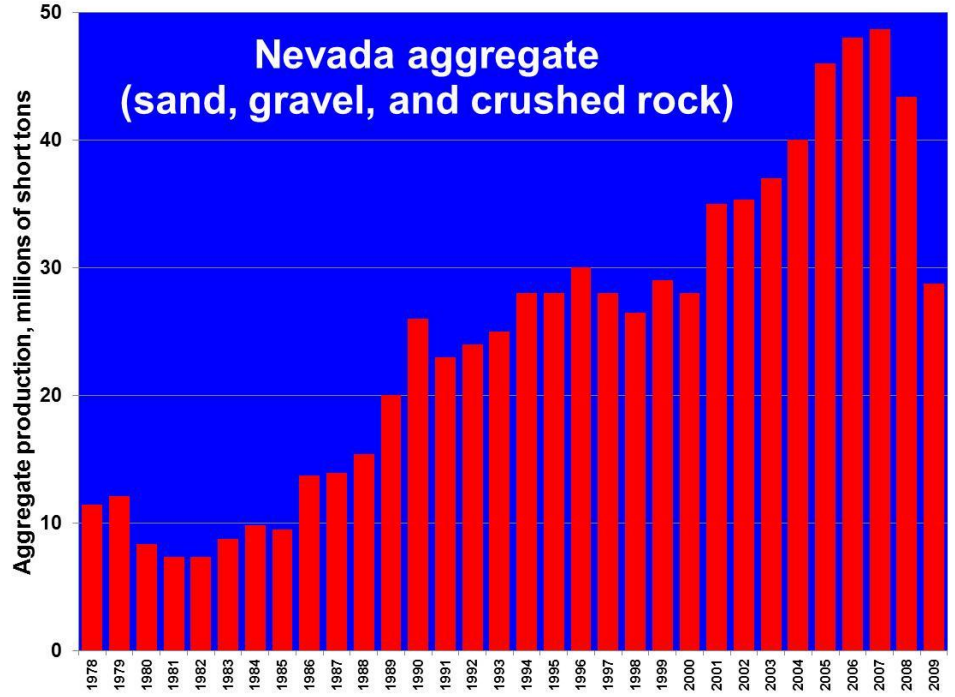
- Controlling the release of mercury to the atmosphere (mercury is typically concentrated along with gold during ore formation and is recovered along with gold during mineral processing)
- Treatment and disposal of large volumes of water, some of which may be too warm to introduce directly into streams or may contain potentially toxic elements that need to be removed

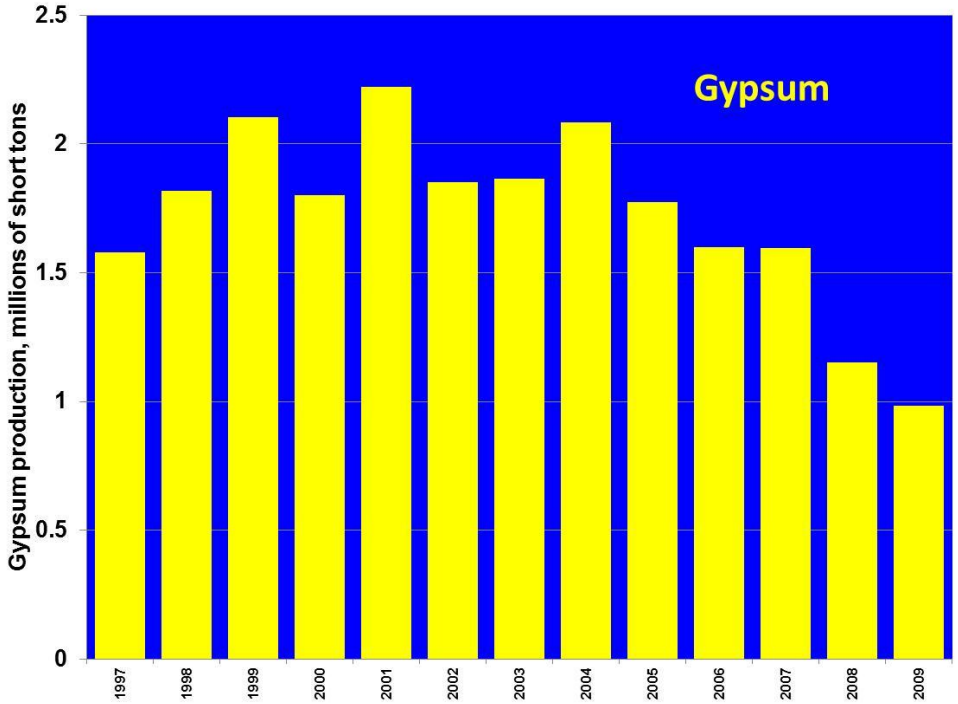
Industry is responding proactively to these challenges through research on and use of new technologies and engineering approaches, and through interaction with people in nearby communities.

The section on **Industrial Minerals** covers developments during 2009 and gives details on important commodities produced from or processed in Nevada, including aggregate, barite, cement, clays, diatomite, dimension stone, dolomite, gypsum, lime, limestone, lithium, magnesite and brucite, perlite, potassium alum (kalinite), pozzolan, salt, semiprecious gemstones (opal and turquoise), silica, and zeolites. Four major operations in Lander and Elko Counties combined to produce most of the barite mined in the U.S.; production declined in 2009 but stayed near levels that have been typical of the last decade.



Aggregate production, which, until the recession hit Nevada particularly hard, had been increasing as a result of Nevada's expanding population and need for construction materials for homes, schools, streets, highways, airports, resort hotels, and other businesses, experienced a decline of nearly 33% from 2008 to 2009. Similarly, the production of gypsum declined in 2009, relative to 2008, because of the effects of the economic recession on construction in Nevada and California.



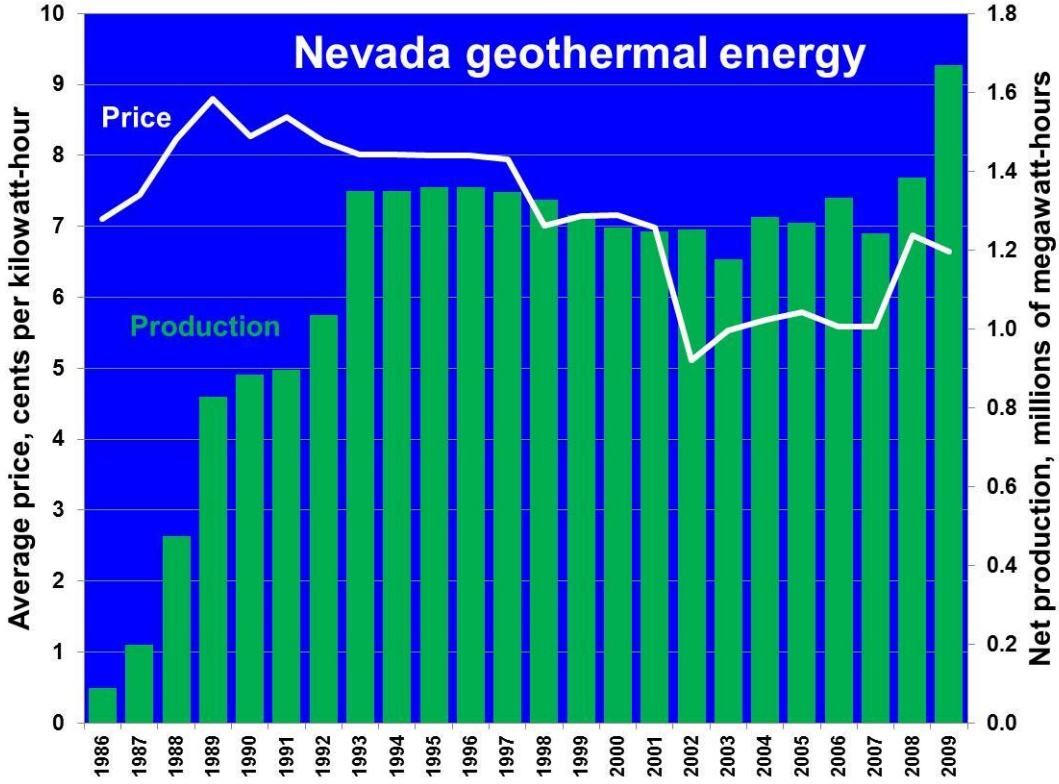


Nonetheless, demand for construction raw materials is likely to remain strong because of Nevada's population and need for highways. The U.S. Census Bureau (www.census.gov) estimated Nevada's population to be 2.643 million in 2009, up 32% from 1.998 million in the 2000 census.

An interesting trend that is occurring in the Las Vegas area as well as nationwide is the combination of aggregate quarries with landfill operations. Planning for the eventual uses of quarries is vital in areas where urban expansion encroaches on the mineral resources. Aggregate is mined locally to reduce transportation costs and related concerns regarding highway safety. Post-mining land uses include suburban developments, landfills, and recreation areas. Gypsum mines near the urban growth areas of Las Vegas are now being considered as sites for housing developments.

Chemetall Foote Corporation's Silver Peak lithium operation in Clayton Valley, Esmeralda County, where subsurface brines are evaporated on a playa, is the only domestic lithium producer, and Premier Chemicals' (now Premier Magnesia) Gabbs Mine in Nye County is currently the nation's only hard-rock producer of magnesite.

Developments in the geothermal industry are covered in the section on **Geothermal Energy**. Electric power production and sales increased substantially from 2008 to 2009 (21% and 17%, respectively). Approximately 17 plants operating at 11 sites sold $111 million in electricity in 2009.

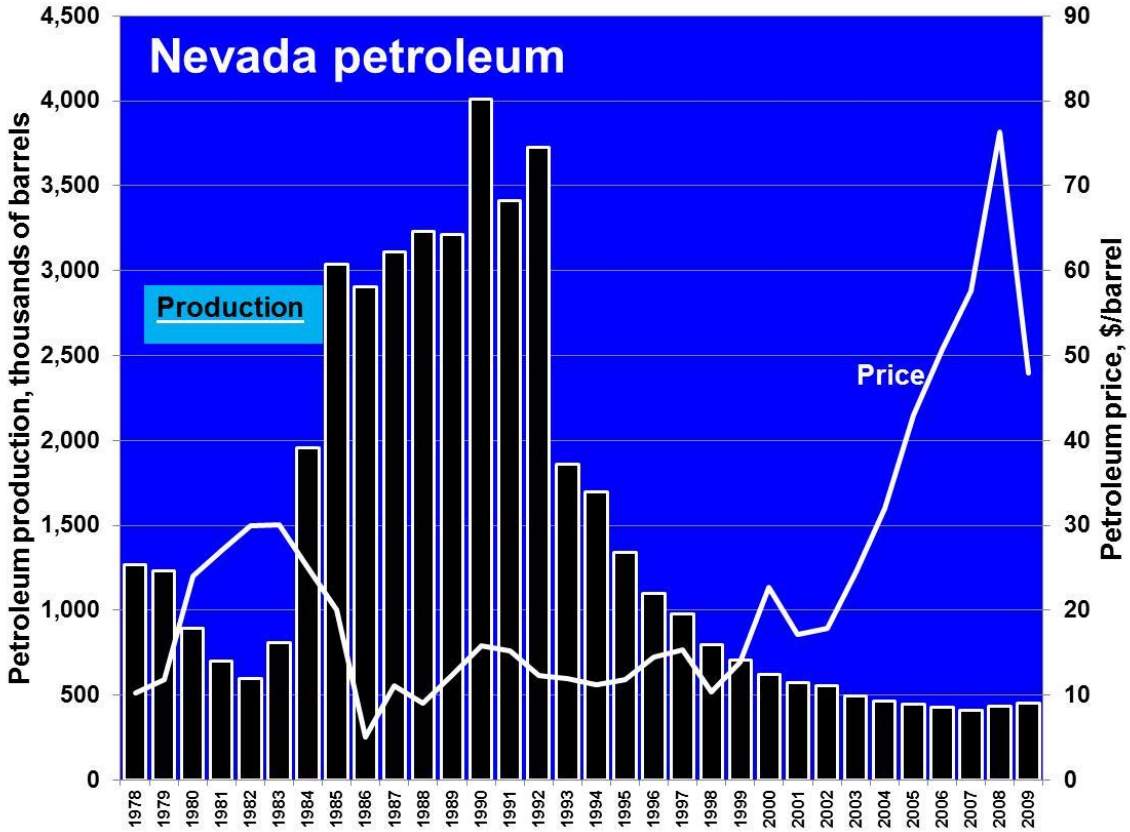


Additionally, geothermal energy is used at numerous places in Nevada for space heating, domestic warm water, recreation, dehydrating vegetables, and other agricultural applications. Programs in the U.S. Department of Energy, energy bills passed by the Nevada and California legislatures, and activities of researchers at the University of Nevada, Reno are stimulating geothermal development in Nevada. Two new plants went into production in 2009 (Nevada Geothermal Power's Blue Mountain plant in Humboldt County and Enel North America's Salt Wells (Eight Mile Flat) plant in Churchill County), and several new plants are under construction or planned to meet Nevada's renewable energy portfolio standard. Nevada Bureau of Mines and Geology Map 161, *Nevada Geothermal Resources (2010)*, available online at http://www.nbmg.unr.edu/sales/pbsdtls.php?sku=M161, shows the locations of geothermal plants, direct-use locations, hot and warm springs and wells; it demonstrates the fact that Nevada has considerable potential for geothermal development. Nevada Bureau of Mines and Geology Open-File Report 09-10, *Preliminary Geothermal Potential and Exploration Activity in Nevada* (2009), available at http://www.nbmg.unr.edu/dox/dox.htm, provides regional information for assessing the potential for high-temperature (>150ºC) geothermal systems. Considerable information on geothermal energy resources in Nevada is provided on the Web at: www.nbmg.unr.edu/geothermal/gthome.htm.

At a 2005 meeting of a task force set up by the Western Governors' Association to assess geothermal resource potential, geothermal energy experts estimated that by 2025 Nevada could add approximately 1,500 to 2,900 megawatts of geothermal power-generating capacity. If this potential were realized, and if energy prices continue to rise, geothermal power could become a billion-dollar per year business in Nevada. Production capacity stood at 424.5 megawatts at the end of 2009.

Nevada has great potential for renewable energy (particularly geothermal, wind, and solar energy for electricity). Approximately 85% of Nevada's electricity currently is generated by power plants that burn fossil fuels, with 59% from natural gas and 26% from coal (the latest, 2008 statistics from the Energy Information Administration, Table S8, http://www.eia.doe.gov/). In 2008, hydroelectric dams accounted for 5.4%, geothermal power plants accounted for 9.1%, and solar power plants accounted for about 0.5% of electricity generated in Nevada. New solar plants are being constructed, primarily in southern Nevada.

Developments in the Nevada petroleum industry are covered in the section on **Oil and Gas**. Oil is produced primarily in two areas—Railroad Valley in Nye County and Pine Valley in Eureka County. Total annual oil production from Nevada (valued at $21.8 million in 2009) is a minor part of U.S. production. The amount of Nevada oil production increased slightly from 2008, although no new fields were discovered. Small amounts of co-produced natural gas are used to fuel equipment used for oil production. The value of Nevada oil production decreased from 2008 to 2009 as a result of lower oil prices.



In 2005, the U.S. Geological Survey released its assessment of undiscovered oil and gas resources of the Eastern Great Basin (available at http://energy.cr.usgs.gov/oilgas/noga/index.htm), an area that includes the eastern portion of Nevada, western Utah, and part of southeastern Idaho. The U.S. Geological Survey estimated mean figures of 1.6 billion barrels of oil and 1.8 trillion cubic feet of natural gas remaining to be found in this region.

Exploration for oil in Nevada is encouraged by the cumulative production from the two premier fields in Railroad Valley: Grant Canyon and Trap Spring (21 million and 14 million barrels, respectively). Historically, few exploration wells have been drilled in the state (fewer than 1,000 wells, or fewer than one well per 111 square miles or 286 square kilometers). With so much area unexplored, even discounting areas underlain by

high-grade metamorphic and granitic rocks, Nevada has the potential for discovery of more multimillion-barrel fields. Three new exploration wells were spudded, and three wells were permitted in 2009, down from eight and 13, respectively, in 2008.

The U.S. is a net exporter of few mined commodities and a net importer of many. Exports of gold from Nevada help offset the staggering U.S. trade deficit (difference between imports and exports of goods and services), which amounted to $375 billion in 2009 (according to the Department of Commerce, Bureau of Economic Analysis, www.bea.gov). Among the major products mined in Nevada, the U.S. relies upon imports for barite (80% of total U.S. consumption from imports in 2009, according to the U.S. Geological Survey, used primarily to prevent blowouts in oil and gas drilling) and silver (63%, used in photographic and other applications). The U.S. also depends on imports of copper (24%, used primarily to conduct electricity) and gypsum (19%, used in wallboard).

Local economies benefit from mining in Nevada. Construction of new homes, casinos, other businesses, schools, and roads requires local sources of sand, gravel, crushed stone, gypsum, and raw materials for cement, all of which are abundant in Nevada. The mining industry directly employed 11,609 people in 2009 (including oil; according to the Nevada Department of Employment, Training and Rehabilitation, http://www.nevadaworkforce.com/), and the industry is responsible for another 49,000 jobs related to providing the goods and services needed by the industry and its employees (D. Driesner and A.R. Coyner, 2009, Major Mines of Nevada 2009, Mineral Industries in Nevada's Economy, Nevada Bureau of Mines and Geology Special Publication P-21, 28 p.; available at www.nbmg.unr.edu/dox/mm/mm09.pdf).

Nevada and the U.S. make significant contributions to the world's production of several mineral commodities. Thanks in part to Nevada's production, the U.S. is a major producer, as well as consumer, of gypsum (with the U.S. accounting for 6% of world production in 2008) and industrial sand (24% of world production). In addition to gold, the U.S. is a leading silver producer (6% of world production). The U.S. is essentially self-sufficient, as are most countries, in construction aggregate, which usually is mined from sources near where it is used. Total U.S. production of construction sand, gravel, and crushed stone in 2009 (approximately 2.0 billion metric tons, according to the U.S. Geological Survey) decreased by 23% from 2008 (after decreasing that year by 16% from 2007), because of weaker demand from the residential and commercial

construction industry. Net imports of aggregate account for approximately 1% of consumption. The U.S. is also self-sufficient in the other major mined material, coal. According to the U.S. Energy Information Administration (www.eia.doe.gov), the U.S. produced approximately 973 million metric tons of coal in 2009, down 8.5% from the record high of 1.063 billion metric tons of coal in 2008. Although no coal is produced in Nevada, coal is a major source of energy for generation of electricity in Nevada and many other states.

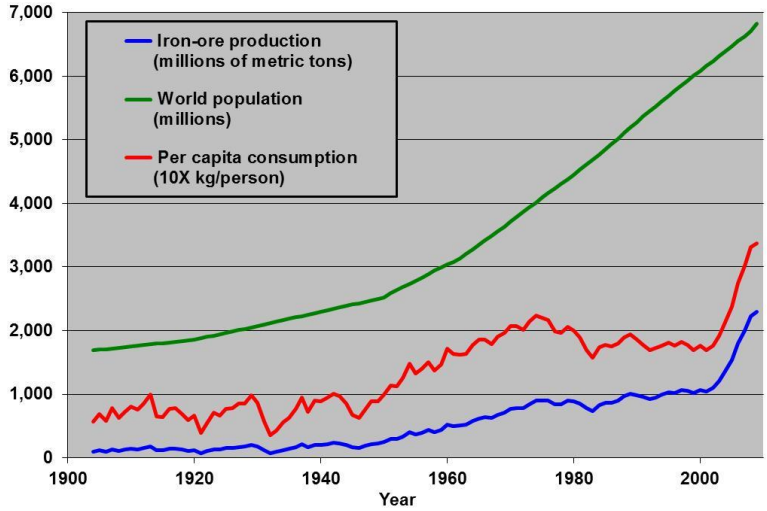
Statistics on selected mineral resources, 2009[1]

Commodity	US Import Reliance (% of US consumption)	Leading Producers (% of world mine production in 2009)
Aluminum ore	100	Australia (31%), China (18%), Brazil (14%), India (11%)
Manganese	100	China (25%), Australia (17%), South Africa (14%), Brazil (10%)
Rare Earths	100	China (97%), India (2%), Brazil (0.5%), Malaysia (0.3%)
Platinum	89	South Africa (79%), Russia (11%), Zimbabwe (3%), Canada (3%)
Barite	80	China (54%), India (14%), US (8%), Morocco (6%)
Tin	80	China (37%), Indonesia (33%), Peru (12%), Bolivia (5%)
Zinc	76	China (25%), Peru (13%), Australia (12%), Canada (7%)
Potash	73	Canada (26%), Belarus (15%), Russia (14%), China (11%)
Silver	63	Peru (18%), China (14%), Mexico (12%), Chile (9%)
Tungsten	63	China (81%), Russia (4%), Canada (3%), Austria (2%)
Chromium	39	South Africa (42%), India (17%), Kazakhstan (16%)
Copper	24	Chile (34%), Peru (8%), US (8%), China (6%)
Gypsum	19	China (27%), Iran (8%), Spain (8%), US (6%)
Nickel	18	Russia (19%), Indonesia (13%), Canada (13%), Australia (12%)
Cement	8	China (50%), India (6%), US (3%), Japan (2%)
Phosphate rock	1	China (35%), US (17%), Morocco (15%), Russia (6%)
Coal	(US is exporter)	China (44%), US (14%), India (8%), Australia (6%)
Iron ore	(US is exporter)	China (39%), Brazil (17%), Australia (16%), India (11%), US (1%)
Gold	(US is exporter)	China (13%), Australia (9%), US (9%), South Africa (9%)
Molybdenum	(US is exporter)	China (39%), US (25%), Chile (16%), Peru (8%)
Silica	(US is exporter)	US (24%), Italy (12%), Germany (6%), UK (5%)
Diatomite	(US is exporter)	US (36%), China (20%), Denmark (11%), Japan (5%)
Beryllium	(US is exporter)	US (85%), China (14%), Mozambique (1%)

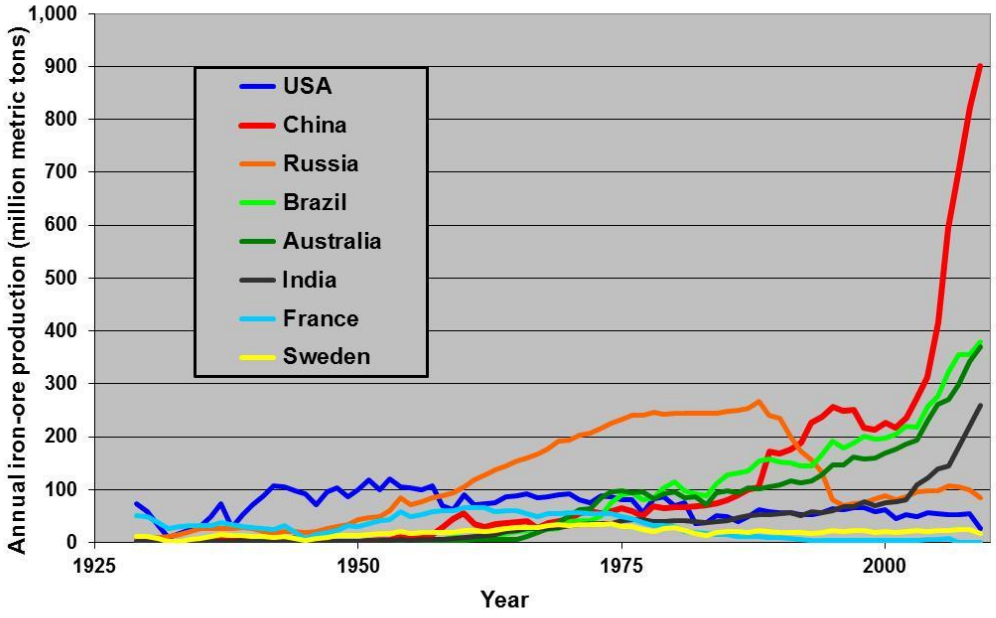
[1] Sources: Production data and import reliance are from USGS Mineral Commodity Summaries 2010 for most commodities, Energy Information Administration for coal. Percentages are calculated from these data.

Global demand for nearly every mineral (and energy) commodity has increased sharply over the last decade, and, despite the current economic recession, trends suggest heavy demand for the foreseeable future. Demand is growing partly because world population is increasing, and partly because standards of living (measured by per capita consumption) are increasing.

Annual global iron-ore production reached an all-time high of 2.3 billion metric tons in 2009. That equals approximately 0.4 km^3 of magnetite or hematite ore, or at least 1 km^3 of ore plus overburden and waste rock – the equivalent of one huge mine, per year.

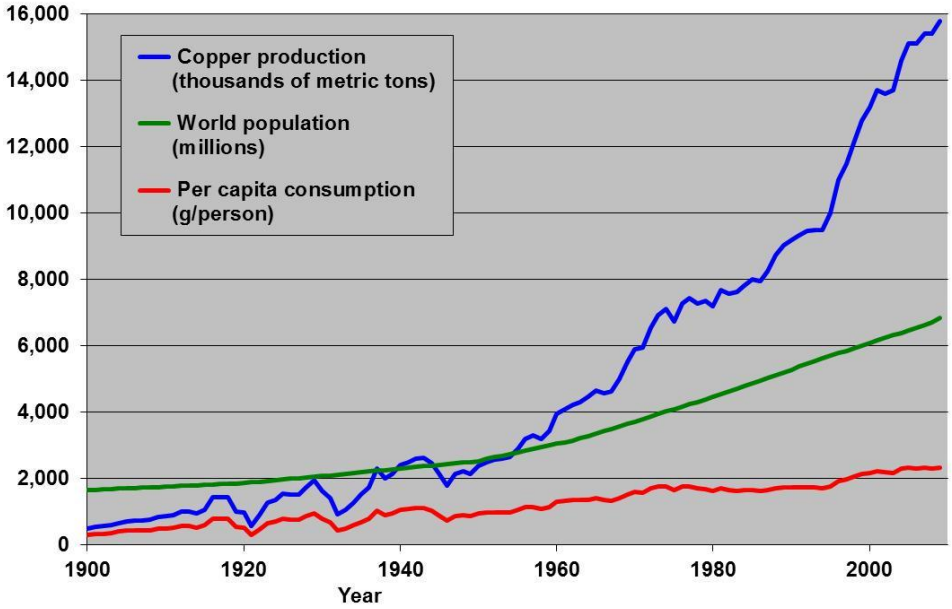


Global iron-ore production, per capita consumption (approximated as global production divided by population), and world population, 1904-2009.

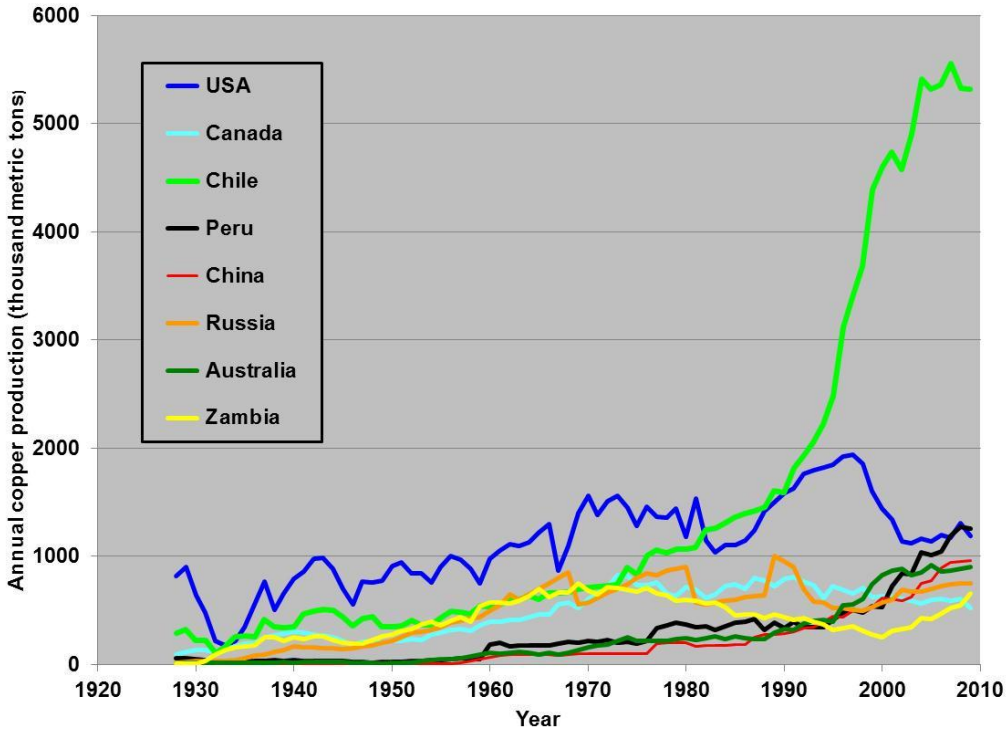


Iron-ore production by country, 1929-2009.

Global copper production, which reached an all-time high of 15.8 million metric tons in 2009, nearly equaled more than 100 years of production from the Bingham Canyon Mine in Utah (16.4 million metric tons).

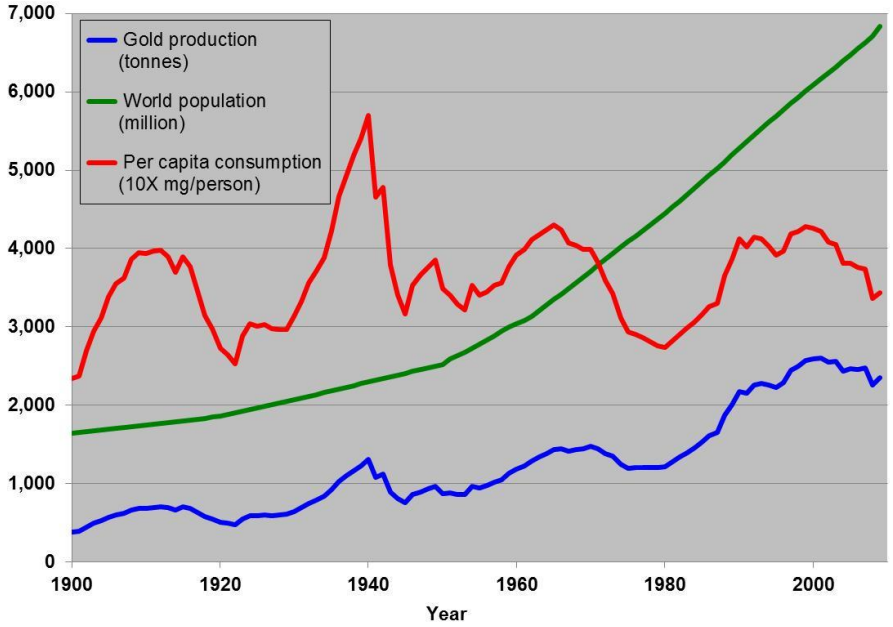


Global copper production, per capita consumption, and population, 1900-2009.

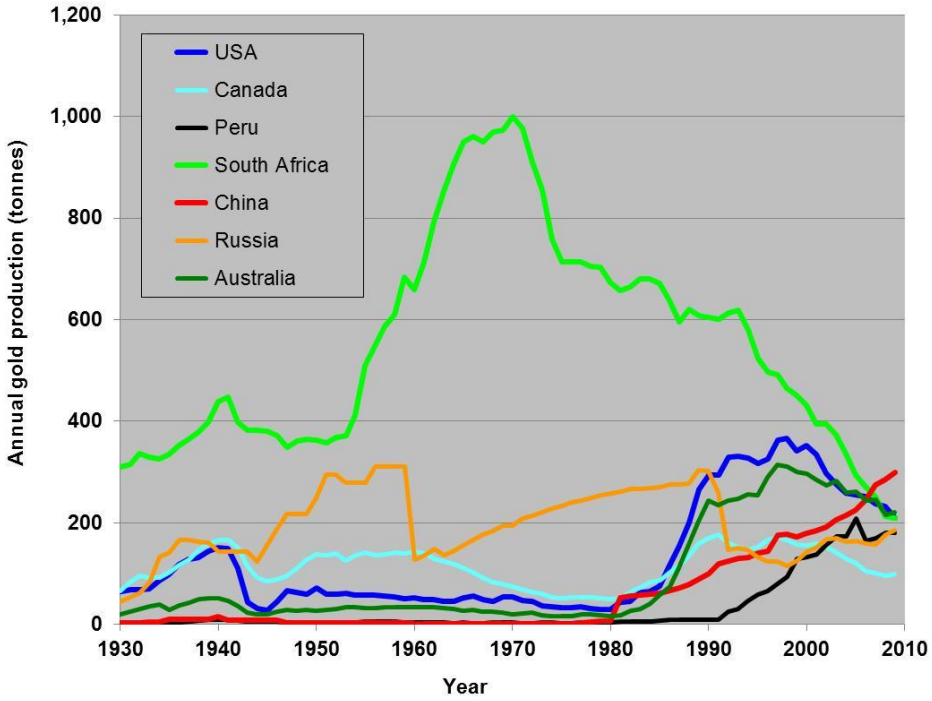


Copper production by country, 1928-2009.

Global gold production in 2009 (2,350 metric tons) approximately equaled the cumulative production from the Carlin trend (2,306 tons), one of world's top gold-mining regions. Despite the rise in gold price in recent years, production has declined from the peak of 2,600 metric tons in 2001.



Global gold production, per capita consumption, and population, 1900-2009.



Gold production by country, 1930-2009.

2009 Global production of selected mineral commodities (metric tons)* by country, compared to Nevada.

Country/State	Area (10^6 km^2)	Gold	Silver	Copper	Gypsum	Barite	Industrial Sand
Algeria	2.38				1,700,000	40,000	
Argentina	2.78				1,200,000		
Australia	7.68	220	1,800	900,000	4,000,000		5,300,000
Austria	0.08				1,000,000		1,500,000
Belgium	0.03						1,800,000
Bolivia	1.10		1,360				
Brazil	8.51	50			2,100,000		
Bulgaria	0.11					30,000	1,500,000
Canada	9.96	100	700	520,000	5,500,000		2,000,000
Chile	0.76	40	2,000	5,320,000			600,000
China	9.57	300	3,000	960,000	42,000,000	3,000,000	
Czech Republic	0.08						1,900,000
Egypt	1.00				2,000,000		
France	0.57				4,800,000		5,000,000
Germany	0.36				1,900,000	60,000	6,500,000
Ghana	0.24	85					
India	3.28				2,600,000	800,000	1,700,000
Indonesia	1.90	100		950,000	6,000		
Iran	1.65				12,000,000	180,000	2,000,000
Italy	0.30				5,400,000		14,000,000
Japan	0.38				5,800,000		4,500,000
Kazakhstan	2.72			410,000		70,000	
Korea, South	0.10						2,000,000
Mexico	1.97	55	2,500	250,000	4,500,000	160,000	2,800,000
Morocco	0.45					350,000	
Norway	0.32						1,500,000
Papua New Guinea	0.46	65					
Peru	1.29	180	3,900	1,260,000			900,000
Poland	0.31		1,200	440,000	1,300,000		5,300,000
Romania	0.24						1,500,000
Russia	17.07	180	1,300	750,000	2,300,000	50,000	
Saudi Arabia	2.15				2,300,000		
Slovakia	0.05						2,000,000
South Africa	1.22	210					2,900,000
Spain	0.50				11,500,000		5,000,000
Thailand	0.51				8,000,000		
Turkey	0.78				3,000,000	110,000	1,200,000
United Kingdom	0.24				1,700,000	40,000	5,600,000
Uzbekistan	0.43	85					
Zambia	0.75			655,000			
USA	9.37	210	1,230	1,190,000	9,400,000	440,000	27,400,000
Nevada	**0.29**	**157**	**227**	**66,100**	**892,000**	**432,000**	**375,000**
WORLD	149.90	2,350	21,400	15,800,000	152,000,000	5,560,000	112,000,000

* Production data for all areas except Nevada are from the U.S. Geological Survey (USGS) minerals information publications (http://minerals.usgs.gov/minerals/), with revisions from USGS mineral commodity specialists during their review of a draft of this report; USGS lacks data for some commodities in some countries; production data for Nevada are from Driesner and Coyner (2010), with modifications as noted in this report; USGS statistics are adjusted to be consistent with Nevada data.

Historical iron-ore production reflects significant economic changes. For example, the 20th century history of iron-ore production reflects the decline of France as a superpower, the impact of the Great Depression on the U.S. economy, and the economic boom after World War II. The 52% drop in U.S. iron-ore production from 2008 to 2009 illustrates the depth of the current recession in the U.S., whereas the global impacts of the recession are hardly visible on the graphs of global iron, copper, and gold production, thanks primarily to China's booming economy.

Although China lags behind the European Union and the U.S. in gross domestic product (estimated as $8.82 trillion for China, $14.82 trillion for the EU, $14.12 trillion for the U.S., $4.15 trillion for Japan, and $3.68 trillion for India in 2009, according to https://www.cia.gov/), China can be considered the world's dominant economic superpower today in terms of mineral production. Russia and the U.S. have declined. For gold, copper, and iron, China's domestic production reached all-time highs in 2009. With 20% of the world's population, China can be expected to be a major producer of mineral resources. India, with 17% of the world's population, is also emerging as an economic superpower, but not at the scale of China. Of the countries listed as producers of 23 key mineral commodities in 2009, China was a significant producer (with ≥10% of world supply) of 18, and the U.S., with 4% of the world's population, was a significant producer of 3. In 2009 China accounted for 44% of global coal production, compared with 14% for the U.S. Global coal production reached its all-time high of 6.97 billion metric tons in 2009.

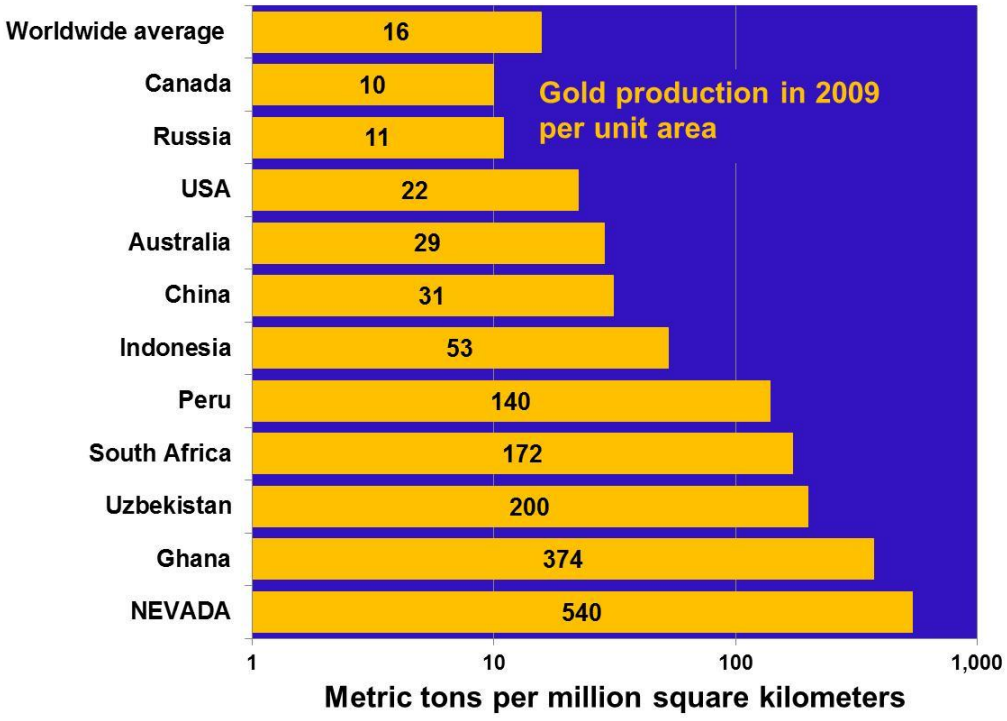
China actually needs more iron ore than it can supply domestically. Much of the recent increase in iron-ore production in Australia and Brazil (133% and 93% more in 2009 than in 2000, respectively) is supplying demand from China. Some iron ore from the U.S. (Iron Mountain, Utah) is shipped to China for steel production. The U.S. is a supplier of raw materials to an increasingly industrialized China.

China overtook South Africa as the leading gold producer in 2007 and extended its percentage lead in 2009. South Africa, whose production peaked at 1,000 metric tons of gold in 1970, had held the lead for over 100 years. China's production reached an all-time high of 300 metric tons in 2009. The South African mines on the Witwatersrand are getting deeper and more costly to operate than ever before. Production in the USSR peaked at approximately 311 tons of gold per year in 1956-1959 and reached 304 tons in 1989. Production in the USA peaked at 366 metric tons

(11.7 million troy ounces) of gold in 1998, approximately one third of South Africa's peak. Today, China accounts for 13% of world gold production, and South Africa, the USA, and Australia each accounts for about 9%.

For industry, the global demand for minerals is creating opportunities for exploration both domestically and worldwide, particularly in areas with potential for large deposits. New opportunities exist for increased development and production, including new technologies for extracting metals from known deposits, and for sustainability, including the future of the environment, local and national economies, social and governmental stability, recycling, and substitutions of other minerals and products. For geological surveys and academia, the high level of demand for mineral resources is creating opportunities for such activities as geologic mapping and interpretation of the 4D geologic framework; geoscience sample and data preservation; and collaborations among states, universities, industry, and the federal government on mineral-resource research, information, and policy.

As a result of its favorable geology, Nevada has tremendous potential for the discovery of additional mineral deposits. Areas where prospective rocks exist beneath a cover of young, valley-filling sediments and volcanic rocks have only been explored to a limited extent, and ore deposits continue to be discovered in and near Nevada's 526 historical mining districts. Nevada is a world leader in terms of gold production per unit area, as shown in the following figure.



Additional information about the Nevada mineral industry and the U.S. gold industry, including the contents of selected publications, is readily available on line through the World Wide Web from the Nevada Bureau of Mines and Geology (www.nbmg.unr.edu/) and the Nevada Division of Minerals (http://minerals.state.nv.us/). Useful national and international data on nonfuel minerals can be obtained from the U.S. Geological Survey (http://minerals.usgs.gov/minerals/), and the U.S. Energy Information Administration (www.eia.doe.gov) provides data on oil and gas, geothermal, solar, wind, hydroelectric, and other energy sources. The Nevada Bureau of Mines and Geology supports several interactive maps on the Web that are backed by periodically updated databases on mineral and energy resources and potential, exploration activity, land ownership and restrictions, and other geographic information.

CONVERSION FACTORS

1 metric ton = 1.1023113 short ton = 1,000 kilograms = 2,204.6226 pounds = 32,150.7 troy ounces.

31.1035 metric tons = 1 million troy ounces (31.1035 grams = 1 troy ounce).

453.592 grams = 1 pound (avoirdupois) = 16 ounces (avoirdupois) = 14.5833 troy ounces.

34.2857 grams per metric ton = 34.2857 parts per million by weight = 1 troy ounce per short ton.

The University of Nevada, Reno's new Great Basin Science Sample and Records Library opened in 2009 and is operated by the Nevada Bureau of Mines and Geology's publication-sales and information-office staff on the campus of the Desert Research Institute, 2175 Raggio Parkway in Reno. With the exception of four windows in the rock-examination room, the windows have a 17.3-nanometer-thin coating of gold, which lowers heating and air-conditioning costs by reflecting heat. Approximately one ounce of gold is all that was needed for the entire building.

Metals

by John L. Muntean

PRODUCTION

Nevada produced 5.033 million ounces of gold, 7.310 million ounces of silver, 145.7 million pounds of copper and 0.30 million pounds of molybdenum from 26 active mines in 2009. Production of three of the four metals was down from 2008, an 11.7% decrease for gold, an 8.2% decrease for silver, and a 17% decrease for copper, but molybdenum increased by 7.8%.

Fifty percent of the gold production in 2009 came from mines on the Carlin trend, helping Barrick Gold Corp. and Newmont Mining Corp. to continue their dominance of Nevada's gold production. Barrick and Newmont accounted for 89% of production in 2009. Barrick produced the most gold, with production from its Goldstrike, Bald Mountain, Ruby Hill, Cortez, and Turquoise Ridge Mines (75% share), plus its 50% share of the Round Mountain Mine's production and 33% share of the Marigold Mine's, amounting to 2,440,587 ounces of gold, a 14.1% decrease from 2008. Newmont produced 2,009,317 ounces of gold, a 9.4% decrease from 2008. It reported production from its Carlin trend mines and from Twin Creeks, Lone Tree, Phoenix, and Midas, plus its 25% share of the Turquoise Ridge Mine. Several gold mines are in the permitting stage and could begin production sometime in 2011 or 2012. These include Newmont's Genesis and Emigrant Gap deposits, the Gold Hill deposit near Round Mountain (50% Kinross Gold Corp., 50% Barrick), Atna Resources Ltd.'s Reward Mine near Beatty in Nye County, and Imperial Metals Corp.'s Sterling Mine, which is also near Beatty.

Newmont was the leading silver producer in 2009, producing 3,158,653 ounces, primarily from its Midas and Phoenix Mines. Coeur d'Alene Mines Corp. recovered 2,181,788 ounces of silver from the leach pads at its Rochester Mine, where mining stopped in 2007. Quadra Mining Inc.'s Robinson Mine produced 84% of Nevada's copper in 2009, amounting to 122,000,000 pounds, a 24% decrease from 2008. Newmont's Phoenix Mine made up the balance of the 2009 copper production, producing 23,733,389 pounds, a 50% increase from 2008. Win-Eldrich Mines Ltd. reopened the Ashdown Mine and reported 214,714 pounds of molybdenum production in 2009. Quadra reported 148,000 pounds of MoS_2 (equivalent to 88,711 pounds of molybdenum) from its Robinson Mine in 2009.

EXPLORATION

Exploration in Nevada slowed considerably in 2009 due to the international financial crisis in the fall of 2008. Nevada county recorders registered 190,375 claim filings in 2009, a 14% decrease from 2008. These included new claims and annual maintenance of existing claims. The distribution of active claims as of the end of 2009 is shown in figure 1. The U.S. Bureau of Land Management (BLM) listed 15,720 new active claims that were located in 2009 (fig. 2), a 24% decrease from 2008. Companies that staked the most claims in 2009 were Fronteer Development Group Inc. (950 claims), Western Lithium Corp. (826 claims), Infrastructure Materials Corp. (808 claims, mostly for limestone), Kinross (720 claims), and Renaissance Exploration Inc. (678 claims). Barrick and Newmont staked only 113 and 34 claims, respectively.

At least 64 projects were drilled in 2009, compared to 123 in 2008. Twenty-three different junior companies drilled 34 of these projects, with the remainder drilled by 12 major or mid-tier companies[1] (fig. 3). More projects were likely drilled, especially small drill programs carried out by major or mid-tier companies, because these companies only occasionally release information on such projects. These data indicate greatly reduced activity by junior companies in 2009. For comparison, 58 different junior companies drilled 88 projects in 2008. Because of the financial crisis in the latter part of 2008, most junior companies had difficulty raising money in 2009. Rather than drilling, they hunkered down into survival mode and conserved as much of their cash as possible.

The main exploration objective in Nevada continued to be gold. Only four of the 64 projects drilled in 2009 targeted metals other than gold, reversing the trend in recent years of increased drilling for other metals. The four projects drilled in 2009 were the Robinson Mine (Quadra) and the Ann Mason project in the Yerington district (PacMag

[1] The classification of companies into major, mid-tier, or junior in this section of the report is arbitrarily based on gold production and market capitalization. The loose criteria are as follows: 1) major companies produce greater than 1 million ounces of gold worldwide, and have market capitalizations of over $3 billion, 2) mid-tier companies produce between 50,000 and 1 million ounces of gold and/or have market capitalizations less than $3 billion but more than $500 million, and 3) junior companies produce less than 50,000 ounces of gold and/or have market capitalizations less than $500 million.

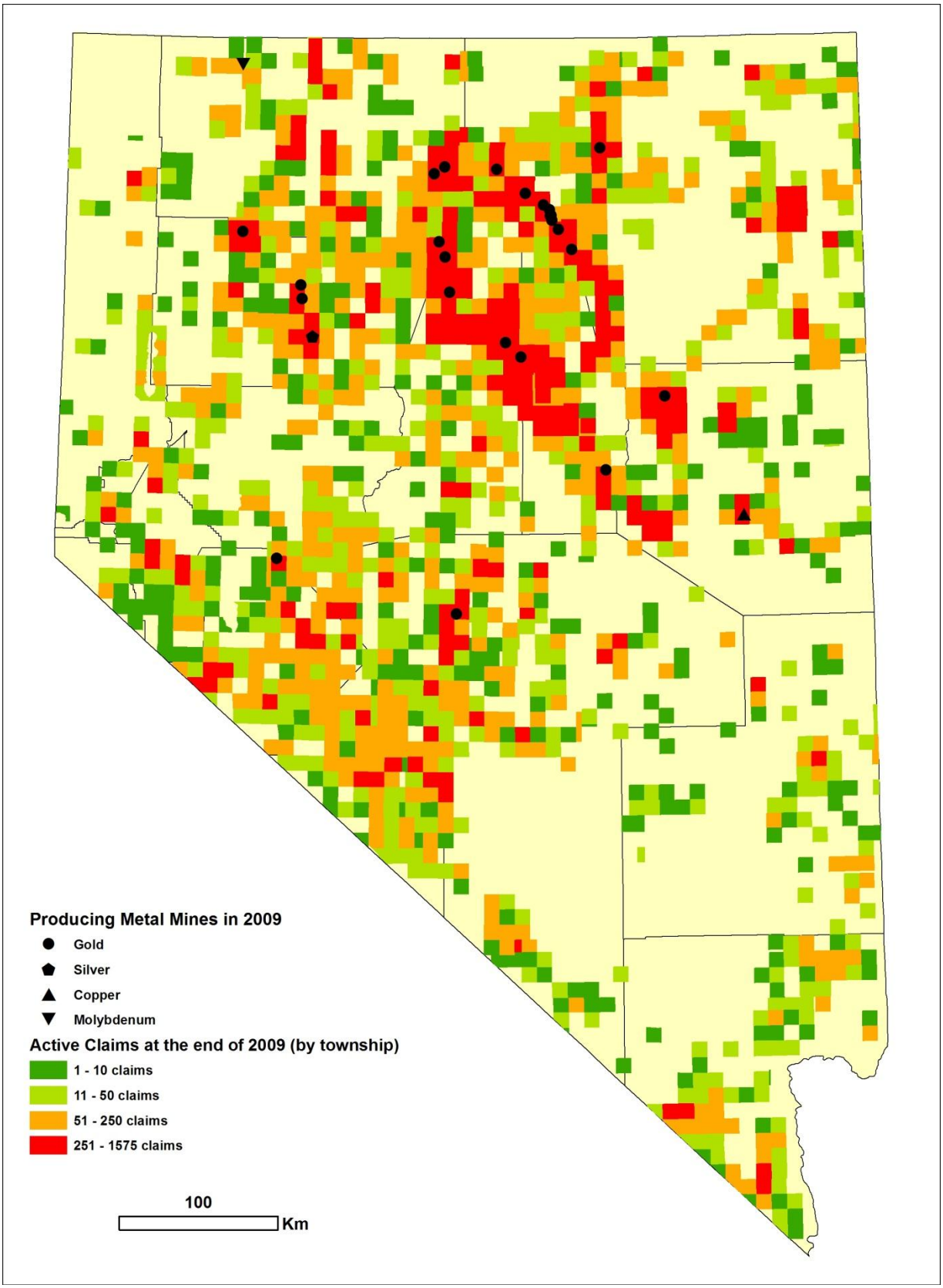


Figure 1. Map showing distribution of active mining claims by township at the end of 2009. Source of data is the U.S. Bureau of Land Management's LR 2000 database.

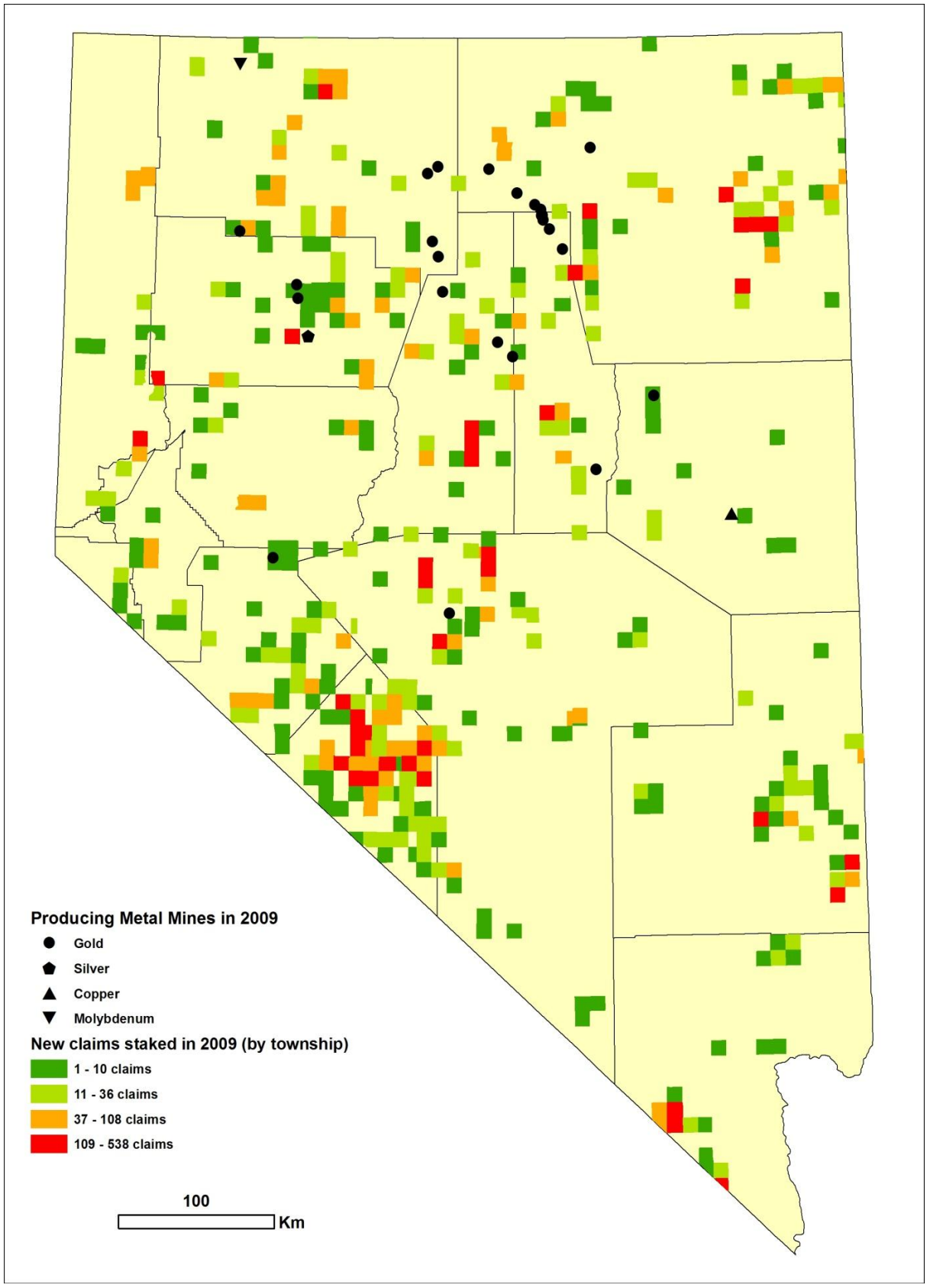


Figure 2. Map showing distribution of active mining claims by township that were staked in 2009. Source of data is the U.S. Bureau of Land Management's LR 2000 database.

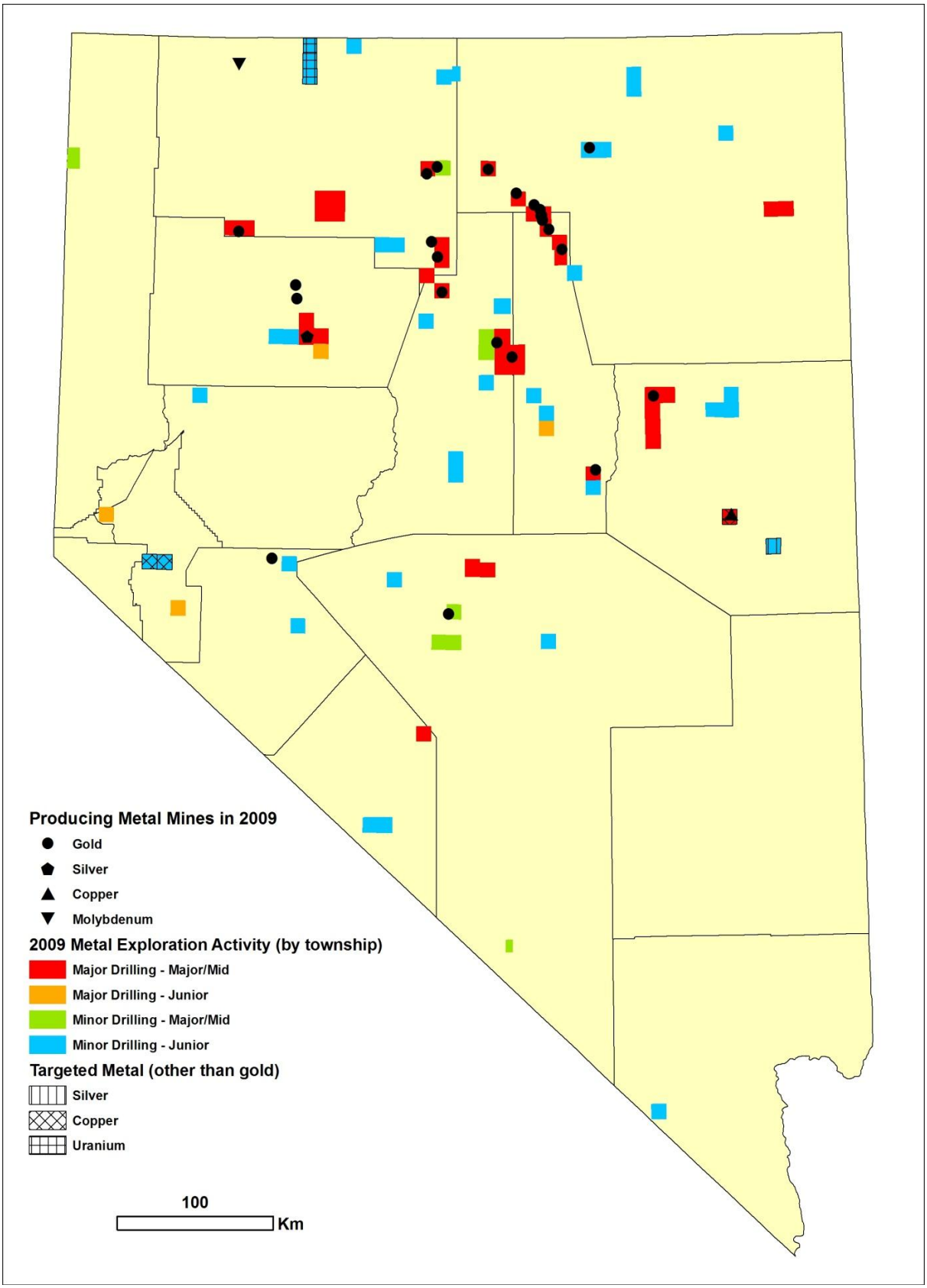


Figure 3. Map summarizing drilling and mine development activity by township in 2009.

Metals Ltd.) for copper, the old Taylor Mine south of Ely (Golden Predator Royalty and Development Corp.) for silver, and the Kings Valley project near McDermitt (Western Uranium Corp.) for uranium as well as for gold. Important non-gold projects that were not drilled in 2009 include: 1) General Moly Inc.'s Mount Hope molybdenum project north of Eureka, which is waiting on final permits before commencing production, 2) General Moly's Liberty molybdenum mine north of Tonopah, which has been tabled until Mount Hope goes into production, 3) Nevada Copper Corp.'s Pumpkin Hollow copper project in the Yerington district (which resumed drilling in 2010), and 4) Quaterra Resources Inc.'s MacArthur copper project, also in the Yerington district.

The major companies that drilled for gold in 2009 continued to focus on their active mine sites. Barrick carried out major drill programs at Cortez, Turquoise Ridge (75% Barrick, 25% Newmont), Bald Mountain, South Arturo (60% Barrick, 40% Goldcorp), and Goldstrike. Barrick faced a potential injunction to stop mining at its new Cortez Hills Mine, but was allowed to continue provided it carried out additional environmental studies. Newmont's drilling focused mainly in and around its mines on the northern Carlin trend and at its Phoenix Mine, whereas Goldcorp drilled nearly 300,000 feet on its Marigold Mine property. The only major drill programs carried out by majors outside active mine areas were Barrick's program at Spring Valley (joint venture with Midway Gold Corp.) and Newmont's programs at Sandman (joint venture with Fronteer Development) and Buffalo Valley (joint venture with Fairmile Goldtech Inc.).

Several mid-tier companies carried out aggressive programs on their gold projects. The exciting Long Canyon project continued to fuel activity in northeast Nevada. Fronteer kept expanding the Long Canyon deposit (joint venture with AuEx Ventures Inc.) by drilling several high-grade oxide intercepts. The 2009 drilling, which totaled over 100,000 feet, resulted in nearly doubling the resource at Long Canyon. Agnico-Eagle Mines Ltd. (joint venture with AuEx Ventures Inc.) drilled over 50,000 feet at the adjacent West Pequop project, encountering several high-grade intercepts in several areas, but has yet to put a resource together. Much of the new claim-staking in 2009 was in northeast Nevada. Other major drill programs were completed at Allied Nevada Corp.'s newly reopened Hycroft Mine, at Great Basin Gold Ltd.'s underground Hollister Mine, at US Gold's inactive Gold Pick and Gold Ridge open pit mines in the Roberts Mountains, and at Fronteer's Northumberland project.

Other drill projects of interest in 2009 included Evolving Gold Corp.'s new "grassroots" project between the town of Carlin and Newmont's inactive Rain Mine. Evolving Gold hit several intercepts of >0.2 opt gold at depths of >2,400 feet in previously untested carbonates of the Popovich Formation, which hosts much of the ore on the Carlin trend. Victoria Gold Corp. continued to drill deep high-grade mineralization northwest of the old Cove open pit mine, which it refers to as the Helen zone. Victoria released its first resource estimate of the Helen zone – 527,000 ounces of gold from material grading 0.77 opt gold. Rye Patch Gold continued to drill its Lincoln Hill project near Lovelock and released the first resource for Lincoln Hill. New resource estimates for other gold projects were released in 2009, including Tip Top, Independence, Toiyabe, Limousine Butte, and Pan.

Exploration activity is summarized below by county and district. Projects that were drilled in 2009 are emphasized. Production, reserves and resources of gold and silver are updated in the section "Major Precious-Metal Deposits." Recent production, reserves, and resources from projects producing or targeting other metals are listed in the section "Other Metallic Deposits."

CHURCHILL COUNTY

Fairview District

Fairview-Hunter. Firstgold Corp. drilled 12 angle holes at its Fairview-Hunter project near the pediment, where pyroclastic rocks with epithermal-style alteration are exposed. No results were released (Firstgold Corp. website, www.firstgoldcorp.com).

Jessup District

Hannah. International Enexco Ltd. (joint venture with Lincoln Mining Corp.) drilled 5 holes totaling 3,057 feet. Due to poor results Enexco dropped the property. No detailed results were reported (International Enexco Ltd. Management and Discussion Analysis, 12/31/2009).

CLARK COUNTY

Goodsprings District

Boss. Boxxer Gold Corp. drilled 5 core holes totaling 928 feet. The three holes that were completed on the Boss zone intersected strongly anomalous concentrations of copper, gold, and silver. The other 2 holes were completed on the Oro Amigo target zone. One of the holes intersected 66 feet averaging 1.05% copper and 0.003 opt gold that included 18 feet grading 3.53% copper, 0.0125 opt gold, 0.0154 opt platinum group elements, and 0.0330 opt silver (Boxxer Gold Corp. Management and Discussion Analysis, 12/31/2009; Boxxer Gold Corp. website, www.boxxergold.com).

ELKO COUNTY

Bootstrap District

REN. In November of 2009, Rye Patch Gold Corp. was negotiating the acquisition of Centerra Gold Inc.'s 64% interest in the REN property. However, in April of 2010, Barrick Gold Corp. (Centerra's joint venture partner at REN) exercised it pre-emptive right to acquire Centerra's share in the property for $35.2 million (Rye Patch Gold Corp. press releases 11/18/2009, 4/8/2010; Centerra Gold Inc. press release 4/8/2010).

South Arturo. A major drill program by Barrick Gold Corp. increased the total gold resource at its South Arturo deposit (60% Barrick, 40% Goldcorp Inc.) by 50% in 2009. South Arturo includes the West Button Hill discovery made in 2008. Much of the resource was upgraded to reserve status for the first time. The probable reserve at South Arturo is 26,314,000 tons grading 0.051 opt gold for a total of 1,350,000 ounces of gold (Barrick Gold Corp. website, www.barrick.com).

Carlin District

Carlin. Evolving Gold Corp. discovered deep high-grade gold mineralization on its Carlin project located northwest of the inactive Rain Mine, just south of the town of

Carlin. The high-grade intercepts occur between depths of 2,490 and 4,720 feet. The best intercepts were: 1) 115 feet averaging 0.035 opt gold that included 5 feet grading 0.347 opt gold, 2) 35 feet averaging 0.216 opt gold that included 10 feet of 0.677 opt gold, and 3) 15 feet averaging 0.905 opt gold. Concentrations of associated trace elements are high, ranging up to >10,000 ppm arsenic, 8,320 ppm antimony, and 20 ppm mercury. The mineralized zones occur in multiple stratigraphic horizons, interpreted to include the Webb and Popovich Formations. Evolving Gold staked 250 additional claims in 2009 (Evolving Gold Corp. press releases 9/10/2009, 2/25/2010; Evolving Gold Corp. Management and Discussion Analysis, 12/31/2009; Evolving Gold Crop. Website, www.evolvinggold.com; BLM LR2000 database).

Contact District

Boston. International Enexco Ltd. drilled 100 holes totaling 101,300 feet in 2007 and 2008 at its optioned Boston property located about 9 miles east of Contact. The activity was not reported in the 2007 and 2008 Mineral Industry reports and, thus, is reported here. The Boston lode claims were some of the earliest mining claims in the Contact district and the original Boston Mine operated from 1880 until the 1920s. Mineralization occurs along the contact between Jurassic granodiorite and Paleozoic sedimentary rocks in the form of Cu-Au-Ag-bearing skarn and replacement mineralization. Several companies have explored the property including Great Lakes Exploration (1984), Tenneco (1987), and Minnova (1990). Enexco determined the results of their program were unsatisfactory and allowed the option to lapse in 2009. No detailed results of its program were reported (International Enexco Ltd. press release, 9/29/2008; International Enexco Ltd. Management and Discussion Analysis, 12/31/2010).

Delano District

Claim Staking. Fronteer Development Group staked nearly 200 claims on the east side of the Delano district near the Utah border (BLM LR2000 database).

Gold Circle District

Midas. Newmont Mining Corp. continued to explore its Midas Mine, drilling both underground and from the surface. No results were released.

Independence Mountains District

Jerritt Canyon. In the first quarter of 2009 Yukon-Nevada Gold Corp. submitted new design plans for mercury emission control equipment and installed required continuous emissions monitoring instrumentation. After receiving approval from the Nevada Department of Environmental Protection, it restarted milling operations and poured the year's first gold in April. In addition to the mercury issues, the mine later received various other stop orders related to unlined tailings facilities and run-off from mine sites, resulting in the mill being operated only 130 days in 2009. Only 9,770 ounces of gold were produced in 2009. In October, mining of new ore in the underground SSX and Smith Mines resumed. A small amount of drilling was completed in 2009 (Yukon-Nevada Gold press release, 10/20/2009; Yukon-Nevada Gold Management and Discussion Analysis, 12/31/2009; Yukon-Nevada Gold website, www.yukon-nevadagold.com).

Ivanhoe District

Hollister. Great Basin Gold Ltd. continued trial mining at its underground Hollister Mine. In 2009 it extracted 70,563 tons of ore at an average gold equivalent grade of 1.15 opt. Great Basin Gold toll-treated 35,916 tons at Newmont Mining Corp.'s nearby Midas mill, producing 31,174 ounces of gold and 243,148 ounces of silver. The tonnage was lower than expected because veins were narrower than anticipated, time to develop stopes was longer than expected, and a safety incident that closed the mine for three weeks. Accordingly, Great Basin mitigated the safety risks and adjusted mining methods to improve efficiencies during this period of trial mining. It completed 10,312 feet of underground development, a third of which was along productive veins. Great Basin Gold continued to work with the BLM on the necessary Environmental Impact Statement (EIS) that will allow full-scale mining. Prior to completion of the EIS and receiving

approval from the BLM for an amended Plan of Operations, the underground exploration and development activities must be conducted within a limit of 275,000 tons of ore per year. Great Basin also completed the first phase of refurbishing its Esmeralda mill.

Underground core drilling during 2009 totaled 99,143 feet. Drilling on both the Clementine and the Gwenivere veins revealed complex structural controls to the ore. The continuity of the Clementine vein system was extended to nearly 2,800 feet, and the Gwenivere vein system was determined to coalesce with the Clementine vein system with a significant thickening of the vein package. Both vein systems are open at depth and to the east and west. Surface exploration was limited to a single geotechnical core hole. Based on drilling completed through March of 2009, Great Basin completed a new resource estimate that benefitted from knowledge gained during trial mining. The new measured and indicated resource that includes reserves is estimated to be 1,111,200 tons grading 1.167 opt gold and 8.59 opt silver for a total of 1,296,400 ounces of gold and 9,546,1000 ounces of silver. Even after accounting for material depleted during trial mining, the new resource estimate is lower than the previous estimate released in 2008. Likely the main cause for the decrease is that the previous resource model over-estimated the width of the veins. The new estimate employed a more conservative approach in the classification of resources as measured and indicated. The new inferred resource is estimated to be 1,035,300 tons grading 1.34 opt gold and 2.72 opt silver for a total of 1,387,500 ounces of gold and 2,815,400 ounces of silver (Great Basin Gold Ltd. press release 6/17/2009; Great Basin Gold Ltd. Management Discussion and Analysis, 12/31/2009; Great Basin Gold website, www.greatbasingold.com).

Island Mountain District

Saint Elmo. Golden Predator Royalty and Development Corp. completed an 8,925- foot reverse circulation drilling program in conjunction with a 1,446-foot core drilling program testing 4 target zones. No results were released (Golden Predator Royalty and Development Corp. Management Discussion and Analysis, 12/31/2009; Golden Predator website, www.goldenpredator.com).

Lafayette District

Claim Staking. Renaissance Exploration Inc. staked nearly 451 claims on the south pediment of the Wood Hills – one of the largest claim blocks staked in 2009 (BLM LR2000 database).

Owyhee Plateau

Star Lake. Altan Rio Ltd. drilled 4 core holes at its Star Lake project that straddles the border between Elko and Humboldt counties on the Owyhee plateau. The holes were located in the immediate area of a key gravity anomaly detected in the southern portion of the Star Lake ground in 2008. Although none of the holes encountered the targeted Paleozoic stratigraphy, assays indicated that weakly anomalous gold did occur in some of the altered volcanic rocks. As a result of the 2009 drilling, Altan Rio dropped the southern portion of its claim block (Altan Rio Ltd. website, www.altanrio.com).

Pequop District

Long Canyon. Fronteer Development Group. Inc. (joint venture with AuEx Ventures Inc.) continued to aggressively develop the Long Canyon gold deposit. Expenditures at Long Canyon totaled nearly $17 million in 2009. In 2009 it drilled 186 core holes totaling 74,021 feet and 52 reverse circulation holes totaling 34,745 feet. The objective of the drilling was infill, metallurgical testing, and exploration. The 2009 drilling included hole LC388 that intersected 115 feet grading 0.271 opt gold – the highest grade-times-thickness intercept to date – and hole LC377C, which intersected 73 feet grading 0.388 opt gold. Importantly, other holes extended mineralization at least an additional 1,300 feet to the northeast. Better intercepts in the holes drilled off to the northeast included 50 feet grading 0.071 opt gold (hole LC372), 160 feet grading 0.124 opt gold (hole LC411), 70 feet grading 0.176 opt gold (hole LC410), 75 feet grading 0.127 opt gold, and 25 feet grading 0.456 opt gold. Core holes drilled as infill holes to confirm and upgrade existing mineralization and to gather additional material for metallurgical testing were also successful. Highlights included 130 feet grading 0.145 opt gold (hole LCM22), 255 feet grading 0.115 opt gold (hole LCM030), 140 feet grading 0.096 opt gold (hole

LCM33), and 39 feet grading 0.494 opt gold (hole LCM36). The Long Canyon gold deposit consists of multiple, sub-parallel north- to northeast-directed zones of oxidized Carlin-style gold mineralization aggregating 800 to 1,000 feet in width with a current strike length of approximately 1.5 miles and still open to extension. Mineralization crops out in the central portion of the deposit, plunges shallowly to the northeast, and is amenable to open-pit mining.

Based on drilling completed through 2009, a new resource estimate for Long Canyon was released in May of 2010. The new measured and indicated resource, at a cut-off grade of 0.0058 opt gold, is 13.49 million tons grading 0.050 opt gold for a total of 672,000 ounces of gold. The inferred resource is 11.46 million tons grading 0.048 opt gold for a total of 552,000 ounces of gold. As in the initial resource estimate, increasing the cut-off grade only modestly reduces the number of contained ounces, while significantly increasing the average grade of the resource. For example, increasing the cut-off grade to 0.029 opt gold results in decreasing the tons of the measured and indicated resource to 5.21 million tons, but increases the grade to 0.107 opt gold for a total of 558,000 ounces of gold. The entire resource is considered to be oxidized. Initial column leach testing completed in 2009 on minus 75 mm-sized material for 65 days resulted in recoveries ranging from 86% to 96%. Tests on minus 25 mm-sized material resulted in similar recoveries. A preliminary economic assessment done on the initial resource estimate, which was released in 2008, indicated a 64% internal rate of return and a net present value of $145 million, based on $66 million in capital expenditures, a $800/ounce gold price, and a direct cash cost of $351/ounce (AuEx Ventures Inc. press releases, 1/6/2010, 1/15/2010, 2/1/2010; AuEx Management and Discussion Analysis, 3/31/2010; AuEx website, www.auexventures.com; Fronteer Development Corp. press releases, 6/11/2009, 9/17/2009, 10/1/2009, 12/1/2009, 2/1/2010, 5/19/2010; Fronteer Development Group Inc. 2009 year-end Management Discussion and Analysis; Long Canyon Technical Report, June, 2010; Fronteer website, www.fronteergold.com).

West Pequop. Agnico-Eagle Mines Ltd. (joint venture with AuEx Ventures Inc.) drilled 57 reverse circulation and core holes totaling 51,389 feet at its West Pequop project, located directly west of the Long Canyon project. The results of the 2009 drill program provided better definition of mineralization in the Acrobat/Juggler, Section 34, and Mountain Top deposits and more data on the Range Front target and on a new target

named Trapeze. The best intercept was 45 feet grading 0.247 opt gold at Mountain Top. In addition to drilling, trenching across the structure at the Mountain Top deposit included 85 feet grading 0.141 opt gold. Also in 2009, a soil survey was completed with over 9,800 samples over an area of four by eight miles and reconnaissance sampling in select areas with more than 1,300 new rock-chip samples. The findings of this work led to the recognition of significant anomalies along the range front, more mineralization between previously drilled areas, and anomalies associated with faults and karst features in a north-south-trending graben that comprises the crest of the Pequop Mountains between the Mountain Top zone and Long Canyon. The graben preserves favorable calcareous host rock of the Ordovician Pogonip Group and underlying Cambrian strata, which are beneath the Eureka Quartzite. The Eureka Quartzite appears to have been relatively impermeable to ascending hydrothermal fluids. The soil analyses, ranging up to 0.175 opt gold, outline considerable leakage around and within the graben structure (AuEx Ventures Inc. press releases, 11/17/2009, 10/4/2010; AuEx Management and Discussion Analysis, 3/31/2010; AuEx website, www.auexventures.com).

Pilot Peak District

Claim Staking. Fronteer Development Group staked nearly 200 claims on the pediment west of the Pilot Peak district in the Pilot Range (BLM LR2000 database).

Snake Mountains District

Loomis. International Enexco Ltd. (joint venture with Fronteer Development Corp.) drilled 12 reverse circulation holes totaling 21,653 feet. The holes were located within a 1,650 by 5,000 foot area where previous sampling had identified several silicified structures containing up to 0.2 opt gold. The drilling revealed a broad zone of anomalous gold grades surrounding structures in upper plate rocks, confirming the structures are nearly vertical and persistent to depths of at least 800 feet. The best intercept, in hole ELM-1, showed an average of 0.0013 opt gold over 500 feet, with grades ranging up to 0.029 opt gold. Associated trace element concentrations were anomalous in all the holes, ranging up to 1,660 ppm As and 73 ppm Sb. Enexco plans

to next drill deeper holes to test prospective lower plate rocks (International Enexco Ltd. Management Discussion and Analysis, 12/31/2009; International Enexco Ltd. website, www.enexco.ca).

Spruce Mountain District

Claim Staking. Renaissance Exploration Inc. staked nearly 200 claims in the Spruce Mountain district (BLM LR2000 database).

Wells Peak

Claim Staking. Barrick Gold Corp. staked 100 claims along U.S. Highway 93 on the northeastern flank of Wells Peak, where Silurian to Devonian carbonates are exposed (BLM LR2000 database).

ESMERALDA COUNTY

Buena Vista District

Tip Top. Gold Summit took an option on the previously drilled Tip Top gold deposit, which it refers to as its Sugarloaf Peak project. It released a resource estimate for Tip Top. The indicated resource at a 0.03 opt Au cut-off grade is estimated to be 388,929 tons grading 0.096 opt gold for 37,181 ounces of gold. The inferred resource is 323,230 tons grading 0.072 opt gold for 23,341 ounces of gold (Gold Summit Corp. Management Discussion and Analysis, 1/31/2010; Gold Summit website, www.goldsummitcorp.com).

Divide District

Tonopah Divide. Centerra Gold Corp. (joint venture with Tonogold Resources Inc.) drilled 28 angled reverse circulation holes totaling 26,585 feet. The best hole of the 2009 program, TD09-025, encountered a total of 395 feet grading 0.021 opt gold in four separate intercepts. The lower two intercepts correlate in part with intervals of quartz-cemented breccia and quartz veinlet stockworks. Host rocks are altered Miocene

volcanic tuffs (Tonogold Resources Inc. press releases, 11/11/2009, 3/1/2010; Tonogold Resources Inc. website, www.tonogold.com).

Monte Cristo District

Claim Staking. Kinross Gold Corp. staked 251 claims on the southeast end of the Monte Cristo Range between the previously drilled Charley gold resource and the old Boss open pit gold mine (BLM LR2000 database).

Palmetto District

Excelsior Springs. Evolving Gold Corp. completed a modest drill program of about 6,600 feet. Results included an intercept of 160 feet grading 0.040 opt gold. It dropped the property in early 2010 (Evolving Gold Corp. Management and Discussion Analysis, 12/31/2009).

EUREKA COUNTY

Antelope District

Gold Pick/Gold Ridge/Cabin Creek. Exploration drilling at US Gold's Gold Bar Complex in 2009 totaled approximately 71,510 feet in 109 reverse circulation holes that were focused on extensions of the Gold Pick-Gold Ridge and Cabin Creek mineralization. Highlights include an intercept of 150 feet averaging 0.085 opt gold, including 25 feet grading 0.251 opt, in a hole drilled between Gold Pick and Gold Ridge. In addition, step-out drilling on the east side of Gold Pick intersected 105 feet averaging 0.070 opt gold that included 15 feet grading 0.195 opt gold. Based on drilling through 2009, US Gold released a new resource estimate for the Gold Pick/Gold Ridge, Cabin Creek, and Hunter deposits in March of 2010. The total measured and indicated resource, using a cut-off grade of 0.012 opt gold, is 36.9 million tons grading 0.026 opt gold, for a total of 974,875 ounces. The total inferred resource is 1.4 million tons grading 0.016 opt gold for 21,869 ounces. Over 90% of the resource occurs in the Gold Pick/Gold Ridge deposit (US Gold corp. press releases 9/9/2009, 10/14/2009,

12/21/2009, 3/31/2010; US Gold Corp. 2009 SEC Form 10-K; US Gold website, www.usgold.com).

Red Canyon. Montezuma Mines Inc. (joint venture with Miranda Gold Corp.) drilled three core holes, totaling 1,137 feet. Drill holes MR09-05C and MR09-06C were designed to follow-up known gold mineralization at the Ice target and as such are not new discovery holes. MR09-05C intersected 119 feet grading 0.152 opt gold, which verified a previously drilled reverse circulation hole, but with 30% higher grade and 25% greater thickness. MR09-06C intersected 60 feet grading 0.10 opt gold. MR09-04C had no significant assays (Miranda Gold Corp. Management and Discussion Analysis, 2/28/2010).

Cortez District

Red Hill/Lower Horse Canyon. Barrick Gold Corp. continued to drill its discovery near Red Hill in lower Horse Canyon. No results were released (Barrick Gold Corp. 2009 year-end SEC Form 40-5, 3/29/2010).

Eureka District

East Archimedes/Ruby Hill. Barrick Gold Corp. carried out an aggressive drill program in 2009. Its exploration is increasingly targeting mineralization along or below the contact between the Hamburg Dolomite and the overlying Dunderberg Shale (Barrick Gold Corp. 2009 Third Quarter Earnings Call Transcript).

South Eureka. Staccato Gold Resources Ltd. drilled 10 holes totaling 8,030 feet at its Windfall project, one of several projects on its large South Eureka claim block. The 2009 drill program at Windfall tested approximately 3,600 feet along strike of the Windfall fault zone. Several thick intercepts of gold mineralization were encountered. Better intercepts from four of the holes include 135 feet grading 0.011 opt gold, 135 feet averaging 0.016 opt gold, 115 feet grading 0.010 opt gold, and 100 feet averaging 0.018 opt gold. Drilling through 2009 defines the Windfall fault as a 150- to 200-foot-thick zone striking roughly north-south and dipping about 60° to the east and containing two or more significant

zones of mineralization (Staccato Gold Resources Ltd., Management Discussion and Analysis, 1/31/2010).

Lynn District

Northern Carlin Trend. Newmont Mining Corp. carried out another extensive drill program on its properties in the northern Carlin Trend, focusing in and around known deposits. Much of the drilling focused on the Leeville-Turf area, mostly from underground. At least 18 surface holes totaling 50,800 feet were drilled as well. Several high-grade intercepts were encountered. A major drill program was also carried out at its Exodus underground project. Exodus occurs along the Castle Reef fault and is accessed by a portal in the bottom of Lantern pit. Open pit mining at Pete and North Lantern started in 2009, whereas mining ended at the Deep Post underground mine in 2009 (Elko Daily Free Press Winter 2009 and Summer 2010 Mining Quarterly issues; Newmont Mining Corp. 2009 year-end SEC Form 10-K; Newmont August 2010 Nevada Site Tour presentation on Newmont website, www.newmont.com).

Goldstrike. In 2009, Barrick Gold's exploration activities on its Goldstrike Mine property focused on drifting and resource delineation drilling at Deep North Post and minor drill testing in the Banshee area. Banshee results were not significant enough to warrant immediate follow-up drilling. The results at Deep North Post were positive. Although the Deep North Post drifting was not completed, the exploration group delineated a potential deposit with 200 foot drill spacing. Approximately 25% of this ore is above the water table. A total of 9,803 feet of underground core and 6,939 feet of surface reverse circulation drilling were completed in 2009 (Barrick Gold Corp. 2009 year-end SEC Form 40-5, 3/29/2010; Barrick Gold Corp. website, www.barrick.com).

Maggie Creek District

Gold Quarry. Newmont Mining Corp. carried out a major drill program at Gold Quarry. No results were released.

Mount Hope District

Mount Hope. General Moly Inc. (joint venture with POS-Minerals) continued its efforts at permitting and financing the development of the Mount Hope porphyry molybdenum deposit (General Moly Inc. 2009 SEC Form 10-K, General Moly website, www.generalmoly.com).

Northern Simpson Park Mountains

Tonkin Springs. US Gold Corp. drilled three reverse circulation holes totaling 4,890 feet that tested three separate targets in the North Mine Corridor area. Although none of the holes intersected ore grade mineralization, two contained weakly anomalous gold mineralization (US Gold Corp. 2009 annual report filed with the U.S. Securities and Exchange Commission (Form 10-K); US Gold website, www.usgold.com).

HUMBOLDT COUNTY

Awakening District

Sleeper. X-Cal Resources Ltd. released a preliminary economic assessment of its Sleeper property. The report indicates a pre-tax net present value of $70 million and an internal rate of return of 25%, based on production of nearly 600,000 ounces of gold in 6.5 years. The estimate is based on a gold price $800 per ounce, an initial capital cost of $86 million, and a cash cost of $324 per ounce. No drilling was carried out in 2009 (X-Cal Resources Ltd. Management Discussion and Analysis, 12/31/2009; X-Cal Resources 43-101 Report, 11/16/2009).

Battle Mountain District

Marigold. The Marigold Mine reached a milestone in 2009 when it produced its two-millionth ounce of gold. Goldcorp Inc. (joint venture with Barrick Gold Corp.) reported that Marigold experienced 21% higher grades and 25% higher processed tons in 2009. The higher grades were due to mining higher grade areas in the Basalt open pit, in comparison to 2008, when lower grades areas of the Basalt and Antler open pits were

mined. Goldcorp carried out a highly aggressive drill program in 2009, keeping about 6 drill rigs busy for the year and drilling 287 holes that totaled 291,026 feet. The drilling mainly focused on the Red Dot resource and the Pediment areas toward the north end of the property. Pediment targets were generated from geochemical sampling and further interpretation of geophysical data. The drilling in the Red Dot area in 2009 resulted in a resource addition of 730,000 ounces of gold (Goldcorp Inc. 2009 Annual report: Goldcorp website, www.goldcorp.com; Elko Daily Free Press Spring 2010 Mining Quarterly issue).

Buffalo Mountain District

Hot Pot. International Enexco Ltd. (joint venture with Nevada Exploration Inc.) drilled 11 core holes totaling 11,358 feet on the Hot Pot project located north of the Marigold Mine and east of Treaty Hill. The drilling encountered weak but widespread anomalous gold grades in all 11 holes, spread across the 3.5 square mile property. The hydrothermally altered and mineralized lithologies that were encountered in the drilling are similar to those at the Marigold Mine. Although all the assays were less than 0.002 opt gold, the mineralized zones that were intercepted were up to 500 feet in length beneath alluvial cover, which was between 130 and 500 feet in all but two of the holes. The drilling also identified zones of oxidation to depths of 1,000 feet, significant intervals of brecciated material indicative of several major fault zones, and an apparent horst block (International Enexco Ltd. Management Discussion and Analysis, 12/31/2009; International Enexco Ltd. website, www.enexco.ca).

Disaster District

Kings Valley. Western Uranium Corp. focused most of its 2009 drill program on the Albisu target, where it completed 11 core holes totaling 10,892 feet. Albisu is an area that exhibits paleo-hot springs-style surface alteration and lies at the northern end of the dominantly north-south structural trend that seems to focus much of the uranium or gold mineralization along the western side of the McDermitt caldera. In 2008, a hole drilled at Albisu intersected 5 feet grading 0.35 opt gold and 135 feet grading 0.019 opt gold. The best intercept in the 11 holes drilled in 2009 was 20 feet averaging 0.12 opt gold, which

included 5 feet grading 0.43 opt gold. Nearly all of the 11 holes intercepted wide intervals of low-grade gold mineralization in the range of 0.003 to 0.012 opt gold.

Two core holes totaling 2,438 feet that were drilled in the Moonlight Mine area encountered zones of low-grade uranium mineralization. Additional evaluation of airborne radiometric data highlighted an area, referred to as JJ, approximately 3 miles to the east and south of the Moonlight Mine. The JJ area exhibits the same radiometric intensity as the outcropping Moonlight Mine area. Ground scintillometer readings were also highly anomalous and a number of rock-chip samples contained anomalous uranium concentrations. Three cores were drilled and intercepted altered tuffaceous volcanic rocks. Results from two of the holes encountered zones of elevated uranium concentrations that were five to six times normal background levels (Western Uranium Development Corp. Management and Discussion Analysis, 12/31/2009; Western Uranium website, www.westernuraniumcorp.com).

Gold Run District

Adelaide. Golden Predator Royalty and Development Corp. drilled 13 reverse circulation holes totaling 7,350 feet. Intercepts from 10 of the holes continued to highlight the continuity of the Margarite vein zone, both along strike and down-dip. Gold and silver grades appear to be increasing with depth. The drilling demonstrated continuity of >0.1 opt gold intercepts over 900 feet of strike length and approximately 150 feet of vertical extent. Golden Predator interprets the zone to represent the upper levels of a boiling zone in a bonanza vein-style epithermal system. The highlight was an intercept of 0.632 opt gold across a true vein width of 23.3 feet, which included a 15.5-foot zone of 0.920 opt gold. The remaining holes targeted the Sage vein zone located approximately 1,500 feet northwest of the Margarite area. The best intercept was five feet grading 0.125 opt gold (Golden Predator Royalty and Development Corp. press releases, 11/10/2009, 12/17/2009; Golden Predator website, www.goldenpredator.com).

Opalite District

Cordero Gold. Nevgold Resource Corp. drilled two core holes totaling 2,798 feet and a reverse circulation hole (240 feet). The holes targeted quartz veins at depths of about

1,000 feet. Banded quartz veins were identified in the drill core, but were typically less than a foot thick. The best intercept was 5.4 feet grading 0.148 opt gold (Nevgold Resource Corp. Management and Discussion Analysis, 1/31/2010).

Potosi District

Pinson. In early 2009, Barrick Gold Corp. notified its joint venture partner, Atna Resources Ltd, that it had completed the expenditure requirement of $30 million to earn its 70% equity position at Pinson, and the two companies formed a joint venture (70% Barrick, 30% Atna). No drilling was completed in 2009. Data are being evaluated to determine the feasibility of development and a future plan for the project. Dewatering of the underground facilities will continue to protect the investment and facilitate re-start, if warranted (Atna Resources Ltd. website, www.atna.com).

Turquoise Ridge. Barrick Gold Corp. continued underground development and drilling on the High Grade Bullion zone at the north end of Turquoise Ridge (75% Barrick, 25% Newmont Mining Corp.). Results continued to be very encouraging. Surface drilling also occurred between the Getchell and Turquoise Ridge deposits and elsewhere on the property (Barrick website, www.barrick.com).

Twin Creeks. Newmont Mining Corp. carried out a drill program at Twin Creeks. No results were released.

Sulphur District

Hycroft. Allied Nevada Gold Corp. completed its first full year of mining operations at its Hycroft Mine. The mine produced 53,189 ounces of gold and 65,753 ounces of silver in 2009. The mine encountered some short-term challenges during the commissioning phase, which it corrected by the end of 2009. These challenges stemmed from a delay in operating the newly constructed areas of leach pad expansion as well as a much higher cyanide consumption than anticipated during the fourth quarter of 2009. The mine completed a 2.5-million-square-foot expansion of its Brimstone leach pad and construction of a refinery. At full production based on current assumptions the mine is

expected to employ 171 workers and will mine approximately 25 million tons of material per year. In 2009 Allied Nevada drilled 129 holes totaling approximately 95,000 feet. The main objective was infill drilling, mainly in the Vortex and Bay areas, in order to upgrade material to proven and probable reserve categories. The drilling at Vortex resulted in an encouraging discovery that might represent a “feeder” zone with high silver grades, which included an intercept of 154 feet grading 16.9 opt silver and 0.016 opt gold with visible pyrargyrite, and 820 feet to the southwest in another hole, an intercept of 62 feet grading 20.2 opt silver and 0.012 opt gold. Evaluation of the drilling through 2009 suggests gold and silver mineralization is hosted along north-south-trending zones approximately 14,000 feet in length. The zones are partially offset laterally by post-ore faults. The second objective of the 2009 drill program was exploration holes to continue testing the metallurgy and economic viability of sulfide gold and silver mineralization. Metallurgical tests indicate the sulfide mineralization is amenable to conventional flotation technology. In April of 2010, Allied Nevada released a new estimated measured and indicated resource, inclusive of reserves, of 510,918,000 tons grading 0.014 opt Au and 0.36 opt Ag for a total of 7,078,000 ounces of gold and 184,184,000 ounces of silver. Cut-off grades of 0.008 opt gold equivalent and 0.018 opt gold equivalent were employed for oxide and sulfide material, respectively. Of that resource, the proven and probable reserve is 177,228,000 tons grading 0.014 opt Au and 0.18 opt Ag for a total of 2,444,000 ounces of gold and 32,270,000 ounces of silver (Allied Nevada Gold Corp. press releases, 1/11/2010, 1/27/2010, 4/1/2010; Allied Nevada Gold Corp. Management Discussion and Analysis, 12/31/2010; Allied Nevada website, www.alliednevada.com).

Tenmile District

Sandman. Newmont Mining Corp. (joint venture with Fronteer Development Group Inc.) continued to develop the gold resources at the Sandman project, drilling 110 core holes totaling about 30,000 feet in 2009. Newmont focused primarily on two near-surface deposits, Southeast Pediment and Silica Ridge, which are separated by about 4 miles. These deposits are exemplified by zones of high-grade, epithermal gold and silver mineralization. Highlights from the 2009 program at Silica Ridge included: 1) 38.8 feet grading 0.233 opt gold, which included 11.4 feet averaging 0.652 opt gold (hole NSM-

123), 2) 24.8 feet grading 1.233 opt gold (hole NSM-137), and 3) 23.2 feet grading 1.305 opt gold (hole NSM-142). Highlights from Southeast Pediment included: 1) 41.9 feet grading 0.417 opt gold, which included 6.1 feet averaging 2.111 opt gold (hole NSM-070), 2) 4.9 feet grading 0.589 opt gold (hole NSM-076), and 3) 15.2 feet grading 0.354 opt gold, which included 3.3 feet averaging 1.53 opt gold. Newmont also conducted preliminary metallurgical, hydrological, and geotechnical studies. Newmont spent approximately $5.8 million on the project in 2009, including $3.9 million on development, $1.3 million on exploration, and $0.6 million on land acquisitions (Fronteer Development Group Inc. press release, 3/25/2010; Fronteer Development Group Inc. 2009 year-end Management Discussion and Analysis; Fronteer website, www.fronteergold.com).

Vicksburg District

Ashdown. Win-Eldrich Mines Ltd. acquired joint venture partner Golden Phoenix Minerals Inc.'s 60% share of the Ashdown property, reopened the underground mine, and produced 214,714 pounds of molybdenum in 2009. Win-Eldrich reported that they intersected the Sylvia Vein about 40 feet below the lowest drill interval that defined the southwest boundary of the Sylvia ore block. The average grade of grab samples was 3% molybdenum, very similar to the overlying drill-defined ore block (Win-Eldrich Mines Ltd. 2009 Annual Report).

LANDER COUNTY

Battle Mountain District

Independence Mine. In late 2009 and early 2010, General Metals drilled 44 reverse circulation holes totaling 12,895 feet on its Independence project located just south of Newmont Mining Corp.'s Phoenix deposit. The program was mainly infill drilling in the near-surface Hill zone. The best intercept was 230 feet grading 0.083 opt gold. Based on that and previous drilling it released its first 43-101-compliant resource estimate. The measured and indicated resource estimated for the oxidized Independence Surface deposit is 14,802,000 tons grading 0.014 opt gold and 0.270 opt silver for a total of

210,400 ounces of gold and 3,990,500 ounces of silver. The inferred resource for the Independence Surface deposit is 5,997,000 tons grading 0.011 opt gold and 0.066 opt silver for a total of 66,000 ounces of gold and 395,800 ounces of silver. The inferred resource for the sulfide-bearing(?), skarn-hosted Independence Deep deposit is 4,182,000 tons grading 0.19 opt gold for a total of 796,200 ounces of gold. Using a cut-off grade of 0.25 opt gold, the inferred resource at the Independence Deep deposit is 1,089,155 tons grading 0.403 opt gold for a total of 439,147 ounces. (General Metals Corp. press releases, 2/22/2010, 3/2/2010, 5/13/2010; General Metals website, www.generalmetalscorporation.com)

Phoenix. Newmont Mining Corp. carried out another major drill program at its Phoenix gold-copper mine. No results were released. Gold reserves were revised down again in 2009, primarily due to metallurgy, geology, and modeling impacts (Newmont Mining Corp. 2009 year-end SEC Form 10-K; Newmont website, www.newmont.com).

Buffalo Valley District

Buffalo Valley. Newmont Mining Corp. (joint venture with Fairmile Goldtech Inc.) continued to explore and drill its Buffalo Valley project. From 2006 to May of 2010, it had completed 253 drill holes and outlined potential economic mineralization amounting to about 630,000 ounces of gold (~ 30 million tons grading ~0.02 opt gold) (R. Reid, Newmont Mining Corp., oral commun., Geological Society of Nevada Symposium, May, 2010).

Bullion District

Fire Creek. Klondex Mines Ltd. drilled 11 core holes and four reverse circulation holes totaling 20,221 feet at its Fire Creek bonanza vein project. The first five core holes targeted untested areas within the Main vein zone and were also drilled to define suitable areas for bulk sampling. These holes encountered several zones with greater than 0.25 opt gold. The best intercept was 8.8 feet grading 1.45 opt gold and 0.88 opt silver. Core hole six, which was drilled to test the southernmost extension of the Main zone, encountered two low-grade veins worthy of future testing. Core holes seven

through nine tested the northern extension of the Main vein zone; the best intercept was 29.8 feet grading 0.08 opt gold. Core holes 10 and 11 tested the northern extension of the New North zone; a low-grade vein was encountered. In 2009 Klondex continued the permitting process required to commence work on a decline to carry out underground drilling (Klondex Mines Ltd. press releases, 11/18/2009. 1/20/2009; Klondex Management Discussion and Analysis, 12/31/2009; Klondex website, www.klondexmines.com).

Gold Acres Window. On its entire Cortez Mine claim block, Barrick Gold Corp. completed 102,390 feet of exploration drilling. A significant proportion of that drilling was done in and around the Pipeline deposit and other targets in the Gold Acres window. No results were released (Barrick Gold Corp. 2009 year-end SEC Form 40-5, 3/29/2010).

Norma Sass. Barrick Gold Corp. (joint venture with Coral Gold Ltd.) drilled a deep reverse circulation hole with a core tail to a depth of 2,586 feet. The hole encountered limestone of the Wenban Formation at a depth of 1,330 feet and bottomed in the Roberts Mountain Formation. No results were reported (Coral Gold Resources Ltd. Management Discussion and Analysis, 1/31/2010; Coral Gold website, www.coralgold.com).

Robertson. Coral Gold Resources Ltd. re-calculated its 2008 resource estimate using a higher gold price and lower cut-off grade of 0.0106 opt gold. The revised inferred resource is 178,924,188 tons grading 0.0189 opt for a total of 3,381,667 ounces of gold. No new drilling was reported for 2009 (Coral Gold Resources Ltd. Management Discussion and Analysis, 1/31/2010).

Utah Clipper. Barrick Gold Corp. did not carry out any work in 2009 and terminated its option agreement with Columbus Gold Corp in March 2010 (Columbus Gold Corp. Management Discussion and Analysis, 06/30/2010; Columbus Gold website, www.columbusgoldcorp.com).

Callaghan Ranch District

Claim Staking. Kinross Gold Corp. staked 465 claims spread over three townships in the Callaghan Ranch district northeast of Austin. This was the largest claim block staked by a major company in 2009 (BLM LR2000 database).

Cortez District

Cortez Hills. Barrick Gold Corp.'s Cortez Hills Mine reached its final stages of commissioning, and at the end of 2009 was just about running at its planned capacity of nearly 450,000 tons of material per day. On December 3rd, the U.S.Ninth Circuit Court of Appeals issued its decision denying most of the claims in an appeal by opponents of the mine, who had filed an unsuccessful suit in 2008 to halt operations. The Ninth Circuit Court, however, ordered a supplemental Environmental Impact Statement (EIS) be prepared by Barrick that specifically provided more information on: 1) the effectiveness of proposed measures to mitigate the effects of groundwater pumping, and 2) the air quality impact of the shipment of refractory ore to Goldstrike for processing and that additional air quality modeling for fine particulate matter be performed. Fortunately for Barrick, it was allowed to continue mining at Cortez Hills. Barrick developed a plan that would minimize the impact of groundwater pumping and air quality issues while it prepared the supplemental EIS. A major surface and underground drill program was completed in 2009. The underground deposit remains open to extension (Barrick Gold Corp. 2009 year-end SEC Form 40-5, 3/29/2010; Barrick Gold Corp. Q4 2009 Earnings Call Transcript; Barrick website, www.barrick.com).

McCoy District

Cove. Victoria Gold Corp. drilled two deep core holes in the Helen zone located northwest of the old Cove open pit mine. The purpose of the two holes was to test the Helen zone below where previous drilling had defined a plunge length of 500 feet for the ore-grade mineralization. The first hole, NW-14, intersected the Helen zone approximately 215 feet below and 65 feet to the east of previously drilled hole NW-13A, which intersected 97 feet grading 0.489 opt gold. Hole NW-14 intersected 34 feet

averaging 0.40 opt gold, which included 8.9 feet grading 1.25 opt gold. Hole NW-15, drilled over 100 feet west of Helen zone, intersected an impressive mineralized zone of 900 feet that averaged 0.073 opt gold containing two separate zones of high gold grades at both the top and base of this interval. The upper high-grade intercept was 18 feet wide, grading 0.94 opt gold. The lower high-grade intercept was 6 feet grading 0.73 opt gold. Based on the drilling through 2009, Victoria released its first resource estimate of the Helen zone in February of 2010. The inferred resource is 684,500 tons grading 0.77 opt gold for a total of 527,000 ounces. The top of the Helen resource is about 1,300 feet below the surface (Victoria Gold Corp. press releases, 4/7/2009, 6/22/2009, 2/4/2010; Victoria Gold website, www.vitgoldcorp.com).

Reese River District

Reese River. New Dimension Resources Ltd. drilled 17 reverse circulation holes totaling 6,234 feet on its Reese River project just north of Austin. The program was designed to test multiple targets within the New York Canyon and Amador Canyon areas. Highlights of the program included 45 feet averaging 1.07 opt silver that included 15 feet grading 2.47 opt silver in the New York Canyon area. That intercept included the targeted faulted contact between sedimentary rocks and an underlying intrusion. New Dimension followed up this drilling by completing two core holes totaling 1,785 feet. Both core holes, which were spaced 500 feet apart, intersected the target zone, which showed strong alteration, quartz veining and sulfides, but neither hole encountered significant silver mineralization (New Dimension Resources Ltd. Management Discussion and Analysis, 1/27/2010; New Dimension Resources Ltd. website, www.newdimensionresources.com).

Toiyabe Mine Area

Toiyabe. American Consolidated Minerals Corp. acquired Golden Oasis Exploration Corp. and its Toiyabe project in early 2009. Based on drilling through 2008, American Consolidated released a new resource estimate. The indicated resource is estimated to be 4,975,000 tons grading 0.035 opt gold for a total of 174,291 ounces of gold. The resource is mainly confined to a set of sub-parallel fault zones cutting both upper and

lower plate rocks and having a drilled strike length of 2000 feet. In 2009, American Consolidated drilled two deep, angled core holes. The first hole did not test its intended target, which was the hanging wall of the West Graben Fault, but did encounter significant mineralization, including 40 feet grading 0.029 opt gold within 200 feet of the surface. The second core hole intercepted 49 feet averaging 0.106 opt gold, that included 5 feet grading 0.437 opt gold at a depth of 875 feet. The intercept is within a fault zone and is related to a newly recognized high-angle “feeder” fault called the “805 Fault”, named after a 2008 drill hole that first cut the fault (American Consolidated Minerals Corp., press releases, 4/16/2009, 12/22/2009; American Consolidated Minerals Corp. Management Discussion and Analysis, 13/31/2009; American Consolidated Minerals Corp. website, www.americanconsolidatedminerals.com).

LYON COUNTY

Wilson District

Pine Grove. Lincoln Gold Corp. drilled 63 reverse circulation holes totaling 16,341 feet in the winter of 2009-2010 in an effort to reaffirm and upgrade existing gold resources. The drilling on the Wilson deposit indicates it remains open to the northeast. The drilling encountered new, five-foot-wide high-grade zones, up to 1.17 opt gold, in the southwestern portion of the Wilson deposit. The drilling also intersected five-foot-wide high-grade zones in the nearby Wheeler deposit, grading up to 2.27 opt gold (Lincoln Mining Corp. Management and Discussion Analysis, 12/31/2009).

Yerington District

Ann Mason. PacMag Metals Ltd. did an initial drill test at its Shamrock target located 5 km south-southeast of the Ann Mason resource. Twelve reverse circulation holes targeted copper skarn mineralization over a width of approximately 800 feet and a strike length of 500 feet. Limited core drilling by Anaconda in the early 1970s had intersected several zones of 1 to 3% copper. The new holes drilled by PacMag in the southern, western and eastern edges of the area intersected strong copper oxide mineralization close to the surface, whereas the holes drilled in the central and northern portion of the

area intersected strong copper sulfide mineralization. Highlights included 110 feet grading 1.72% copper and 73.5 feet averaging 1.08% copper. However, cross-sections suggest potential problems with continuity. Initial metallurgical test work by PacMag confirmed that the copper oxide mineralization at its Blue Hills target, located northwest of the Ann Mason resource, is acid-soluble with an average recovery of 80%. In November, Entrée Gold Inc. entered into a definitive agreement with PacMag to acquire all the issued shares and options of PacMag. The deal was finalized in 2010. As part of its due diligence, Entrée Gold released a new resource estimate for Ann Mason in January 2010. The inferred resource using a copper cut-off grade of 0.3% is 893 million tons grading 0.4% copper. The accompanying molybdenum resource is estimated at 183 million tons grading 0.01% molybdenum (PacMag Metals Ltd. 2009 Annual Report, Pacific Magnesium website, www.pacmag.com.au; Entrée Gold Inc. press releases 11/29/2010, 6/15/2010; Entrée Gold Inc. January 2010 Technical Report; Entrée Gold Inc. website www.entreegold.com).

Pumpkin Hollow. Nevada Copper Corp. released a new resource estimate on its Pumpkin Hollow project, based on drilling through 2008. The new total measured and indicated resource at a cut-off grade of 0.2% copper is 488,228,000 tons grading 0.58% copper, 0.002 opt gold, 0.069 opt silver. This represents a 42% increase in the copper resource to 5.6 billion pounds and a 55% increase in the gold resource to 983,000 ounces. The inferred resource at a cut-off grade of 0.2% copper is 440,826,000 tons grading 0.42% copper, 0.001 opt gold, and 0.048 opt silver. Using a grade of 0.3% copper, the measured and indicated resource for the western open pit deposits is 197,652,000 tons grading 0.66% copper, 0.002 opt gold, and 0.080 opt silver. Using a grade of 1% copper, the measured and indicated resource for eastern underground deposits is 30,508,000 tons grading 1.83% copper, 0.006 opt gold, and 0.143 opt silver (Nevada Copper Corp. press release, 7/15/2009).

MINERAL COUNTY

Eagleville District

Eagleville. Golden Predator Royalty and Development Corp. completed four reverse circulation holes totaling 2,465 feet. The program targeted continuation of gold-bearing quartz veins at depths below the mapped historical workings. The veins were intersected but gold grades were not sufficiently high to report (Golden Predator Royalty and Development Corp. Management Discussion and Analysis, 12/31/2009; Golden Predator website, www.goldenpredator.com).

Santa Fe District

Santa Fe. Victoria Gold Corp. (joint venture with Barrick Gold Corp.) drilled six core holes in 2009. The program was designed to expand the extent of known gold mineralization both laterally and to depth, to determine the controls on higher gold grades, to gather data for structural analysis, and, as the program evolved, to determine the magnitude and effects of post-mineral faulting. Grades from previous drilling were confirmed. The best intercept was 931 feet averaging 0.073 opt gold, including 37.1 feet grading 0.33 opt gold. An important observation derived from core logging was that the silica-sulfide breccias, which typically grade 0.03 to 0.1 opt gold are overprinted by a number of fracture sets consisting of sulfides and illite, which grade up 1 opt gold (Victoria Gold Corp. Management and Discussion Analysis, 2/28/2010; Victoria Gold Corp. website, www.vicgoldcorp.com).

NYE COUNTY

Bare Mountain District

Reward. Atna Resources Ltd. continued to make progress toward reopening the Reward Mine. During 2009 work was completed on an Environmental Impact Statement, and the BLM signed the Record of Decision and Finding of No Significant Impact to approve development of Reward. In January 2010, the Nevada Division of

Environmental Protection issued a Reclamation Permit. This permit, subject to the placement of reclamation bonds, will allow Atna to commence construction of the Reward Mine. Other major permits, including the Air Quality Operating Permit, Water Pollution Control Permit, and a Permit to Change Point of Diversion, Manner of Use and Place of Use of The Public Waters, have also been issued by the State of Nevada (Atna Resources Ltd. Management and Discussion Analysis, 12/31/2009; Atna Resources Ltd. website, www.atna.com).

Sterling. Imperial Metals Corp. drilled 22 underground core holes aimed at extending gold mineralization in the 144 zone at its Sterling project. After extending the north drift of the 144 zone by 187 feet, nine holes were drilled to test its northern extent. All nine holes encountered intervals of 3 to 15 feet grading greater than 0.1 opt gold, adding significantly to the size of the 144 zone. The best intercept was 49.5 feet averaging 0.066 opt gold that included 4.5 feet grading 0.293 opt gold. The gold mineralization within the north extension is not controlled by the usual contact zone between the Bonanza King dolomite and the Carrara limestone, but occurs within a high-angle east-west fault zone which also defines the southern boundary of the overlying Sterling ore bodies. Four holes tested the potential of a latite dike. Hole SU09-71 intersected 5.5 feet grading 1.206 opt gold along the dike's western margin. Continuing through the dike, a zone of 6.5 feet grading 0.491 opt was encountered. The entire 90 foot-width of the dike graded 0.086 opt gold. The other three holes encountered continuous gold mineralization in the dike. Hole SU09-81 returned the best intercept – 130 feet averaging 0.214 opt gold, including 5 feet grading 1.438 opt gold. Four holes tested the western margin of the 144 zone. Hole SU09-74 encountered 101.5 feet averaging 0.062 opt gold, which included 16 feet grading 0.107 opt gold. Five holes, were drilled beyond the known southern limit of the 144 zone, and all encountered variably mineralized breccias. The best intercept was 80 feet averaging 0.089 opt gold, which included 10 feet grading 0.243 opt gold. The site has been permitted, and bonding has been put in place to allow for a restart of mine operations (Imperial Metals Corp. press release, 10/15/2009; Imperial Metals 2009 Annual Information Form, 12/31/2009; Imperial Metals website, www.imperialmetals.com).

Manhattan District

Manhattan. Kinross Gold Corp. (joint venture with Barrick Gold Corp.) drilled various gold targets on its property holdings in the Manhattan district, including at Mustang Hill along the margin of the Manhattan caldera (J. Ellis, Kinross Gold Corp., oral commun., September 2009).

Manhattan Pediment. Newmont Mining Corp. carried out a small drill program on its claim block on the pediment west of Manhattan (J. Ellis, Kinross Gold Corp., oral commun., September 2009).

Northumberland District

Northumberland. Fronteer Development Group Inc. spent $3.8 million on its Northumberland gold project in 2009. Results from metallurgical work completed in 2009 indicate 87% recovery from sulfide material and 89% from transitional material. The results also indicate that no significant preg-robbing organic carbon was present. Composite samples of a range of mineralization styles were tested by standard bottle-roll and carbon-in-leach methods. The results indicate that grinding to 20 microns will yield good recoveries. The 2009 exploration drill program, designed to test a new target concept in the Zanzibar area, highlighted a large high-grade gold zone within 500 feet of the surface. Six reverse circulation holes confirmed and upgraded a continuous zone of high-grade gold mineralization that is at least 740 feet long, up to 200 feet wide, and 100 feet thick. This zone remains open to the northwest and is now thought by Fronteer to be one of multiple, parallel high-grade zones that characterize the Zanzibar area. Highlights of the drilling include 40 feet grading 0.361 opt gold (hole FNU30) and 25 feet grading 0.427 opt gold (hole FUN29). Fronteer also drilled four core holes for geotechnical purposes in order to investigate rock quality and strength in areas that may eventually host open-pit high walls. Permits were filed with the state of Nevada to build a decline to access the deeper extension of the Zanzibar resource in order to conduct an underground exploration drill program to better define the grade and continuity of mineralization, and to undertake metallurgical sampling (Fronteer Development Group

Inc. press releases, 7/15/2009, 12/1/2009, 2/18/2010' 3/1/2010; Fronteer 2009 Year-End Management's Discussion and Analysis; Fronteer website, www.fronteergold.com).

Round Mountain District

Round Mountain. Kinross Gold Corp. (50% Kinross, 50% Barrick Gold Corp.) completed a drill program in and around the open pit. Permitting continued on a major pit expansion, which is expected to extend the mine life to 2016, with production expected to continue from the leach pads and stockpiled ore until 2022 (Kinross Gold Gold Corp. 2008 Annual Information Form, 12/31/2009; Kinross Gold website, www.kinross.com).

San Antone District

Liberty. General Moly Inc. carried out only limited work on its Liberty molybdenum project in 2009, putting it on care and maintenance. General Moly intends on putting its Mount Hope deposit into production before spending significant additional resources on Liberty (General Moly Inc. US 2009 annual report filed with the U.S. Securities and Exchange Commission (Form 10-K); General Moly website, www.generalmoly.com).

Twin River District

Claim Staking. Hardrock Mines LLC staked 383 claims in the Twin River District in the Toiyabe Range (BLM LR2000 database).

Tybo District

Bolo. Columbus Gold Corp. drilled six angled reverse circulation holes totaling 3,990 feet in its Phase III drilling program at Bolo. Five of the holes were drilled along the Mine Fault testing for extensions of mineralization intersected by hole BL-23, which was drilled in 2008 and had an intercept of 100 feet grading 0.069 opt gold. Drill hole BL-29 was drilled to cut the Mine Fault 100 feet south of BL-23, and it intercepted 205 feet grading 0.019 opt gold, including 15 feet averaging 0.055 opt Au. Drill hole BL-32 tested the Mine Fault 100 feet north of BL-23 and cut 170 feet grading 0.024 opt gold,

including 30 feet averaging 0.056 opt gold. Hole BL-30 intersected the Mine Fault 360 feet north of BL-23 and intercepted 55 feet grading 0.006 opt Au. Hole BL-31 cut the Mine Fault 250 feet south of BL-23 and intersected 15 feet grading 0.030 opt gold. Hole BL-33 was drilled to cut the Mine Fault 250 feet below the gold intercept in hole BL-23; however, it intercepted only anomalous gold concentrations. Columbus Gold indicated the Mine Fault could be offset at depth by a flat fault. Significant silver grades, as high as 3.10 opt, were locally intersected in four of the holes. No silver grades were reported from Hole BL-23. The drill results, combined with historical channel sampling of five trenches totaling 1,800 feet in length suggest the mineralized zone intercepted by hole BL-23 is about 200 feet long, about 200 feet wide, and extends to a depth of 500 feet. The sixth hole was drilled in a gravel covered area about 1 mile northeast of hole BL-23. It intersected no significant gold values. Columbus Gold's projects in Nevada, including Bolo, are managed on an exclusive basis by Cordilleran Exploration Company (Cordex) (Columbus Gold Corp. Management Discussion and Analysis, 12/31/2009; Columbus Gold website, www.columbusgoldcorp.com).

Union District

Summit. Victoria Gold Corp. drilled three core holes totaling 4,196 feet. The program was designed to find high-grade structural zones below previously identified mineralization. Small-scale open pit mining in 1988 and 1989 produced 8,800 ounces of gold at a grade of 0.24 opt gold. The mined ore occurred in Tertiary volcanic rocks. Several of the historical drill holes ended in strongly altered Triassic carbonate rocks, which contained anomalous gold grades. The best intercept from the 2009 Victoria drilling was 5 feet grading 0.73 opt gold, at a downhole depth of 800 feet. Victoria decided to return the property to underlying claimant Taminco Corp. (Victoria Gold Corp. press releases, 10/29/2010, 12/15/2010; Victoria Gold Corp website, www.vicgoldcorp.com).

PERSHING COUNTY

Antelope Springs District

Fisher Canyon. NV Gold Corp. drilled 28 shallow reverse circulation holes. Significant intercepts of shallow, oxidized gold mineralization were in 15 of the holes. Highlights include 55 feet grading 0.039 opt gold and 45 feet averaging 0.011 opt gold. Both intercepts were within a hundred feet of the surface. The intercepted gold mineralizaton encompasses an arcuate trend at least 6,900 feet long and 150 to 500 feet wide (NV Gold Corp. press release, 1/4/2010).

Relief Canyon. In April of 2009 Firstgold Corp. announced it put its Relief Canyon Mine on care and maintenance in light of defaulted loans. It spent much of the remainder of 2009 trying to secure financing to restart full-scale mining at Relief Canyon. Most of the financing surrounded negotiations with a Chinese company; however, snags occurred during the approval process with the U.S. government that arose from national security issues. Eventually, the Chinese company withdrew their application. In January 2010, Firstgold Corp. filed for bankruptcy protection. In its attempt to restart the mine, it produced small amounts of gold and silver in 2009 (Elko Daily Free Press, 4/23/2009; Firstgold Corp. Management Discussion and Analysis, SEC Form 10-Q, 12/24/2009; FirstGold Corp. SEC Form 8-K, 4/26/2010).

Mill City District.

Springer Mine/Mill. EMC Metals Corp. kept its Springer mill and tungsten project on care and maintenance pending improvement in the global financial markets and strengthening in tungsten prices. Upon restart, it estimates it will take approximately 180 days to make the facility operational (EMC Metals Corp. website, www.emcmetals.com).

Rochester District

Lincoln Hill. Rye Patch Gold Corp. drilled 15 reverse circulation holes and 4 core holes totaling 8,225 feet and 1,826 feet, respectively. Core hole LRC-002, returned 0.618 opt gold over 23 feet starting at a depth of 83 feet. The drilling shows the main Lincoln Hill

target contains high gold and silver grades along northeast-trending structures within a broader zone of quartz stockwork. The drill core shows the stockwork mineralization has a high-angle as well as a horizontal or bedding-controlled component. Hole LRC-002 intersected veins and veinlets that locally contain visible gold. The veins are hosted within a thicker zone of altered, silicified rhyolite. Intersections between favorable horizons within the altered rhyolite and northeast structures appear to control the high grades. Core hole LRC-003 intersected 108.6 feet grading 0.032 opt gold within the stockwork zone. The drilling through 2009 shows the quartz stockwork zone has promise for bulk-mineable gold and silver at Lincoln Hill. Using a gold equivalent grade of 0.01 opt gold equivalent, the halo of stockwork mineralization in the Lincoln Hill target ranges between 33 and 260 feet in thickness and has gold equivalent grades ranging between 0.5 and 2.30 g/t over an area of 2000 feet by 1000 feet. Holes that were drilled within the historical high-grade Orofino Mine area returned disappointing results. Based on drilling it completed in 2008 and 2009, Rye Patch Gold released a resource estimate in May of 2010. At a gold equivalent grade of 0.01 opt, the inferred resource is 18,976,000 tons grading 0.02 opt gold and 0.5 opt silver for a total of 380,000 ounces of gold and 9,488,000 ounces of silver (Rye Patch Gold Corp. press releases, 12/10/2009, 5/18/2010; Rye Patch 2009 year-end Financial Statement; Rye Patch website, www.ryepatchgold.com).

Spring Valley District

Spring Valley. In March of 2009, the joint venture between Barrick Gold Corp. and Midway Gold Corp. was finalized. In 2009 Barrick drilled 34 holes totaling 29,002 feet of reverse circulation drilling and 8,738 feet of core drilling. Barrick's drilling focused on confirmation of previous drill results, infilling defined mineralized areas, and initial metallurgical test work. Significant intercepts drilled in 2009, determined by fire assay, include 395.5 feet grading 0.037 opt gold and 156 feet averaging 0.028 opt gold in core hole SV09-416, and 15.8 feet grading 1.731 opt in core hole SV09-454C. Significant intercepts, by metallic screen assays, include 52.5 feet averaging 0.899 opt gold that included 5 feet grading 9.101 opt gold in core hole SV09-451C. The metallic screen assays highlight the abundance of coarse gold in the Spring Valley deposit. Barrick sampled 13 composites from drill core resulting in no significant difference in recovery

between oxide and sulfide material. Gold recoveries, estimated from bottle-roll cyanide tests ranged from 86% to 98% from oxide, sulfide, and transition composites. Preliminary column leach tests indicate 70% recovery. Gravity separation tests showed gold recoveries in the range of 50.6% to 91% of the calculated head grade. The majority of gold recovered by gravity was released with the coarsest grind. Gravity tails were found to be amenable to leaching of the remaining gold (Midway Gold Corp. press release, 11/30/2009; Midway Gold SEC Form 10-K 2009 Annual Report; Midway Gold website, www.midwaygold.com).

Willard District

Wilco. Rye Patch Gold Corp. completed seven reverse circulation drill holes totaling 8,870 feet. The drilling, which was focused on the North Basin target, had mixed results. The drilling indicated the upper oxide mineralization continues into the North Basin area, and northeast faults and structural intersections with north-south oriented structures are controlling the high gold grades in the lower mineralized zone, which is located along a siltstone-claystone contact (Rye Patch Gold Corp. press release, 2/23/2010; Rye Patch 2009 year-end Financial Statement; Rye Patch website, www.ryepatchgold.com).

STOREY COUNTY

Comstock District

Comstock. Goldspring Inc. completed its major drill program in February of 2009. During the program, which started in December of 2007, Goldspring completed 182 reverse circulation holes totaling 92,800 feet at the Lucerne-Hartford complex. Part of the program included six reverse circulation holes in Spring Valley. While all six holes encountered anomalous mineralization, the fifth hole intersected 30 feet grading 0.209 opt gold and 0.992 opt silver. This previously unknown mineralization was found beneath just 40 feet of pediment gravels (Goldspring Inc. 2009 Annual Report SEC Form 10-K, 12/31/2009).

WASHOE COUNTY

Hays Canyon

Hays Canyon. Eldorado Gold Corp. (joint venture with AuEx Ventures Inc.) drilled two reverse circulation holes totaling 2,000 feet to test a volcanic-rock-hosted epithermal gold target located near the Nevada-California border. No significant mineralized zones were intersected and the property was returned to AuEx. The property has no reported production. Tenneco Minerals drilled six shallow holes in the 1980s, which intersected several narrow zones of anomalous gold grades (Eldorado Gold Corp. Management and Discussion Analysis, 12/31/2009; AuEx Ventures Inc. website, www.auexventures.com).

WHITE PINE COUNTY

Bald Mountain District

Bald Mountain. Barrick Gold Corp. carried out a major drilling program on its large Bald Mountain property. Drilling focused on the Redbird discovery adjacent to the RBM deposit and the Top deposit among other areas, including Alligator Ridge. No results were released. It plans on expanding the Rat, Top/Sage Flats, Saga, Bida/Belmont, LJ Ridge, and Numbers pits. In addition, Barrick is working with BLM on a plan to conduct a large amount of drilling in and around the old Winrock and Casino open pits (Elko Daily Free Press article, 4/17/2009; Elko Daily Free Press Spring 2010 Mining Quarterly; Barrick Gold Corp. Q3 2009 Earnings Call Transcript; Barrick website, www.barrick.com).

Butte Valley District

Limousine Butte. US Gold released a resource estimate for its Limousine Butte property in July 2009, based on drilling through 2007. The measured and indicated resource from the Resurrection Ridge and Cadillac Valley deposits is 10,600,000 tons grading 0.023 opt gold for a total of 772,600 ounces. The inferred resource at the

Coffee Mug deposit is 2,500,000 tons grading 0.020 opt gold for 50,700 ounces. Preliminary metallurgical studies consisting of a series of bottle-roll tests showed an average gold recovery of 92.9%. Exploration drilling in 2009 totaled 14,220 feet in 20 reverse circulation holes. The drilling focused on two new targets outside the existing resources. The best intercept was 115 feet averaging 0.055 opt gold, which included 25 feet grading 0.011 opt (US Gold press releases, 7/15/2009, 12/21/2009; US Gold Corp. 2009 annual report filed with the U.S. Securities and Exchange Commission (Form 10-K); US Gold website, www.usgold.com).

Pancake District

Pan. Based on drilling completed through 2008, Midway Gold Corp. released an updated resource estimate for its Pan project in November 2009. The new measured and indicated resource, estimated using a cut-off grade of 0.006 opt gold, is 34.65 million tons grading 0.018 opt gold for a total of 608,700 ounces of gold. There is an additional inferred resource of 1.6 million tons grading 0.017 opt gold, containing 26,500 ounces of gold (Midway Gold Corp. press release, 11/5/2009; Midway Gold SEC Form 10-K 2009 Annual Report; Midway Gold website, www.midwaygold.com).

Robinson District

Robinson. Quadra Mining Ltd. carried out a major drill program at its Robinson copper mine. No results were released. From 2006 to the end of 2009, Quadra had completed 113 RC holes and 23 core holes in the Tripp-Veteran deposit and 140 RC holes and 63 core holes in the Ruth deposit. In addition to new drilling, Quadra has also carried out a major program of re-assaying old holes, mainly in the Tripp-Veteran and Ruth areas. An additional 22 drill holes were selected from the Taylor Mine area, north of the Veteran Mine, to assist in evaluating a district target area. The re-assay project was completed in 2009. Mining in 2009 occurred in both the Ruth and Veteran pit areas (Quadra Mining Ltd. 2009 year-end Annual Information Form; Quadra website, www.quadrafnx.com).

Taylor District

Taylor. Golden Predator Royalty and Development Corp. completed 11 reverse circulation holes totaling 4,595 feet. The drilling covered over 2,000 feet of the corridor of high-grade silver mineralization in the vicinity of the historic Taylor underground mine. The same structural zone hosting high-grade mineralization in the historic workings extends north into the modeled resource area. Three holes that were drilled across the high-grade structural zone in the resource area returned grades that exceeded the expected grades in the model. The best intercept was 80 feet averaging 5.75 opt silver that included 5 feet grading 19.75 opt Ag, which was within 80 feet of the surface. Initial metallurgical testing using cyanide leach columns indicated a recovery of 54.7% for the silver. Golden Predator owns the mill at Taylor (Golden Predator Royalty and Development Corp. press release, 10/14/2010; Golden Predator Royalty and Development Corp. Management Discussion and Analysis, 12/31/2009; Golden Predator website, www.goldenpredator.com).

Major Precious-Metal Deposits

by John L. Muntean

The information in this compilation was obtained from the Nevada Division of Minerals and from published reports, articles in mining newsletters, and company websites, annual reports, and press releases. Locations of most of these deposits are shown on NBMG Map 149, and most active mines are shown on page 2 of this publication.
opt = troy ounces per short ton.

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
CHURCHILL COUNTY				
Bell Mountain (Bell Mountain district)	1982: 1 million tons, 0.055 opt Au, 1.4 opt Ag 1989: reserves-30,000 oz Au, 125,000 oz Ag 1997: 2.5 million tons, 0.059 opt Au equiv. oz		rhyolitic tuff	Miocene
Buffalo Valley gold property (Eastgate district)	1996: 96,000 oz Au		rhyolitic ash-flow tuff	Tertiary
Dixie Comstock (Dixie Valley district)	1991: 2.4 million tons, 0.049 opt Au 1995: 100,000 oz Au		Tertiary rhyolite	Miocene?
Fondaway Canyon (Shady Run district)	1988: 400,000 tons, 0.06 opt Au 1990: 400,000 tons, 0.06 opt Au 2001: 396,000 tons, 0.428 opt Au (indicated resource) 372,849 tons, 0.409 opt Au (inferred resource)	1989: 1,065 oz Au, 87 oz Ag 1990: 12,000 oz Au	Triassic slate and phyllite	
Jessup (Jessup district)	1998: 8,376,564 tons, 0.024 opt Au, 0.25 opt Ag ("global resource") 2007: 5,432,000 tons, 0.022 opt Au, 0.31 opt Ag (indicated resource); 1,265,000 tons, 0.017 opt Au, 0.23 opt Ag (inferred resource) 2009: 8,571,000 tons, 0.015 opt Au, 0.255 opt Ag (measured resource); 13,936,000 tons, 0.012 opt Au 0.209 opt Ag (indicated resource); 4,954,000 tons, 0.016 opt Au, 0.231 opt Ag (inferred resource)			
New Pass property (New Pass district)	1994: 3.4 million tons, 0.042 opt Au 1997: 3.1 million tons, 0.055 opt Au 2006: 11.5 million tons, 0.0226 opt Au, 0.0041 opt Ag (inferred resource) 2009: 11,142,000 tons, 0.028 opt Au, 0.24 opt Ag (measured and indicated resource)		Triassic siltstone	
CLARK COUNTY				
Crescent property (Crescent district)	1992: 390,000 tons, 0.05 opt Au; 3.3 million tons, 0.022 opt Au			
Keystone (Goodsprings district)	1990: *estimated geologic resource-* 64 million tons, 0.05 opt Au 1992: 110,000 tons, 0.11 opt Au	1990: ~1,000 oz Au 1993: idle	lower Paleozoic carbonate rocks	Triassic
ELKO COUNTY				
Big Springs (Independence Mountains district)	1987: 3.76 million tons, 0.148 opt Au 1989: 1.55 million tons, 0.172 opt Au 2005 (inferred resource, 0.025 opt Au cut-off): 15.145 million tons, 0.078 opt Au 2005 (inferred resource, 0.3 opt Au cut-off): 468,000 tons, 0.45 opt Au	1987-88: ~106,000 oz Au 1989-92: 274,000 oz Au, 48,000 oz Ag 1993: 52,752 oz Au 1994-95: 30,095 oz Au, 2,877 oz Ag	Mississippian to Permian overlap assemblage clastic and carbonate rocks	Eocene

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Bootstrap/Capstone/ Tara (Bootstrap district)	1989: *geologic resource*-25.1 million tons, 0.039 opt Au 1996: 20.2 million tons, 0.046 opt Au proven and probable reserves; 1 million tons, 0.086 opt Au mineralized material	1988-90: included in Newmont Gold production at the end of this section 1996: 19,800 oz Au 1999: 147,088 oz Au, 28,395 oz Ag 2000: 131,979 oz Au, 13,402 oz Ag 2001: 92,775 oz Au, 21,093 oz Au 2002: 23,415 oz Au, 4,717 oz Ag 2003: 29,742 oz Au, 5,480 oz Ag 2004: 154,521 oz Au, 43,566 oz Ag 2005: 3,849 oz Au, 322 oz Ag 2006: 2,019 oz Au, 436 oz Ag	dacitic dikes, Paleozoic siltstone and laminated limestone/chert	Eocene
Burns Basin (Jerritt Canyon, Independence Mountains district)	2005-2007: 29,700 tons, 0.134 opt Au (open pit indicated resource) 30,700 tons, 0.194 opt Au (underground indicated resource), 50,600 tons, 0.23 opt Au (underground inferred resource)		Hanson Creek and Roberts Mountains Formations	
California Mountain (Jerritt Canyon, Independence Mountains district)	2005-2007: 8,000 tons, 0.11 opt Au (open pit indicated resource) 32,100 tons, 0.38 opt Au (underground indicated resource), 9,400 tons, 0.33 opt Au (underground inferred resource)		Hanson Creek and Roberts Mountains Formations	
Coyote Zone (Jerritt Canyon, Independence Mountains district)	2005-2007: 45,200 tons, 0.21 opt Au (underground indicated resource) 2,700 tons, 0.18 opt Au (underground inferred resource) 2006-2007: 20,100 tons, 0.104 opt Au (open pit inferred resource)		Hanson Creek and Roberts Mountains Formations	
Cobb Creek (Mountain City district)	1988: *geologic resource*-3.2 million tons, 0.045 opt Au			
Cord Ranch (Robinson Mountain district)	1991: 3.5 million tons, 0.037 opt Au 1994: 350,000 oz Au in 3 deposits (see Piñon)		Webb Formation Devils Gate Formation Tomera Formation Diamond Peak Formation	
Dee (Bootstrap district)	1982: 2.5 million tons, 0.12 opt Au 1990: 4.5 million tons, 0.059 opt Au 1999: 1.4 million tons, 0.157 opt Au, proven and probable reserves	1985-88: 189,983 oz Au 1989-92: 172,745 oz Au, 142,000 oz Ag 1993-95: 97,860 oz Au 1996: 45,070 oz Au, 50,322 oz Ag 1997-98: 72,595 oz Au 1999: 36,329 oz Au, 68,400 oz Ag 2000: 61,171 oz Au, 110,900 oz Ag 2001: 2,351 oz Au, 6,028 oz Ag	Vinini Formation, Devonian carbonate rocks, dacitic dikes	Eocene
Doby George (Aura district)	1995: 3.7 million tons, 0.060 opt Au 1997: 250,000 oz Au		Schoonover	

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Hollister (Ivanhoe district)	1989: oxide-18.4 million tons, 0.035 opt Au; estimated mineral inventory 83.5 million tons, 0.034 opt Au, with 52.8 million tons of oxide and 30.7 million tons of sulfide 1995: 1,300,000 oz Au; 42 million tons of 0.031 opt Au (geologic resource, combined oxide and sulfide) 2001: 719,000 tons, 1.29 opt Au, 7 opt Ag 2007 (May, 0.25 opt Au cut-off grade): 903,000 tons, 1.03 opt Au, 5.71 opt Ag (measured and indicated resource) 805,000, tons, 1.08 opt Au, 3.94 opt Ag (inferred resource) 2008 (June, 0.25 opt Au cut-off grade): 1,615,000 tons, 0.87 opt Au, 4.57 opt Ag (measured and indicated resource) 1,252,000 tons, 0.51 opt Au, 1.43 opt Ag (inferred resource) 2009 (June, 0.25 opt Au cut-off grade): 1,111,200 tons, 1.167 opt Au, 8.59 opt Ag (measured and indicated resource, includes reserves) 1,035,300 tons, 1.340 opt Au, 2.72 opt Ag (inferred resource)	1990: 6,000 oz Au 1991: 60,000 oz Au 2007: 4,066 oz Au, 38,885 oz Ag 2008: 41,890 oz Au, 192,000 oz Ag 2009: 31,174 oz Au, 243,148 oz Ag	rhyolitic tuff, flows	Miocene
Jerritt Canyon property (Independence Mountains district)	1981: 12.5 million tons 0.231 opt Au 1989: 21.6 million tons, 0.143 opt Au mill ore; 6.5 million tons, 0.043 opt Au leachable 1999: 1.5 million oz Au, proven and probable reserves; 3.8 million oz Au other 2000: 1.3 million oz Au proven and probable; 3.7 million oz Au other mineralized material 2001: 2.058 million oz Au proven and probable; 893,000 oz Au other 2002: 580,913 oz Au, proven and probable reserves; 1.296 million oz Au measured and indicated resource; 1.035 million oz Au inferred resource 2003: 820,104 oz Au, proven and probable reserves; 2.295 million oz Au measured and indicated resource; 1.034 million oz Au inferred resource 2004: 9.988 million tons, 0.241 opt Au measured and indicated resource; 4.1 million tons, 0.219 opt Au inferred resource 2005: 3.723 million tons, 0.24 opt Au (proven and probable reserves); 8.812 million tons, 0.24 opt Au (measured and indicated resource, includes proven and probable reserves), 2.6465 million tons, 0.23 opt Au (inferred resource) 2006: 1.9849 million tons, 0.245 opt Au (proven and probable reserves); 8.2032 million tons, 0.232 opt Au (measured and indicated resource, includes proven and probable reserves), 2.4148 million tons, 0.226 opt Au (inferred resource) 2007: 3.1552 million tons, 0.227 opt Au (proven and probable reserves); 8.1969 million tons, 0.239 opt Au (measured and indicated resource, includes proven and probable reserves); 2.3197million tons, 0.224 opt Au (inferred resource)	1981: ~2.6 million oz Au 1991: 1,380,000 oz Au, 25,000 oz Ag 1995: 1,296,492 oz Au 1999: 363,000 oz Au 2000: 334,747 oz Au 2001: 295,328 oz Au, 7,752 oz Ag 2002: 338,660 oz Au, 8,154 oz Ag 2003: 302,095 oz Au 2004: 243,333 oz Au 2005: 202,911 oz Au, 6,322 oz Ag 2006: 169,862 oz Au, 7,154 oz Ag 2007: 121,700 oz Au, 17,560 oz Ag 2008: 35,936 oz Au, 4,620 oz Ag 2009: 9,770 oz Au	Hanson Creek and Roberts Mountains Formations	Eocene
Kinsley Mountain (Kinsley district)	1988: 2.1 million tons, 0.048 opt Au 1996: 3.4 million tons, 0.032 opt Au	1993: evaluation 1995-97: 127,065 oz Au, 24,452 oz Ag 1998: 9,543 oz Au 1999: 1,543 oz Au	upper Paleozoic carbonate rocks	Oligocene?

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Long Canyon (Pequop district)	2009 (March, 0.012 opt Au cut-off grade): 5,300,000 tons, 0.069 opt Au (indicated resource) 9,678,000 tons, 0.048 opt au (inferred resource) 2010 (May, 0.006 opt Au cut-off grade): 13,492,000 tons, 0.050 opt Au (measured and indicated resource) 11,457,000 tons, 0.048 opt au (inferred resource)			
Maverick Springs (Maverick Springs area)	2002: 350,000 oz Au, 32.3 million oz Ag, indicated resource; 747,000 oz Au, 68.8 million oz Ag, inferred resource 2004: 69.63 million tons, 0.01 opt Au, indicated resource; 85.55 million tons, 0.008 opt Au, inferred resource			
Meikle (Lynn district)	1992: 7.9 million tons, 0.613 opt Au (geologic resource) 1999: 5.9 million tons, 0.647 opt Au proven and probable reserves; 3.3 million tons, 0.457 opt Au mineralized material 2000: 4.9 million tons, 0.540 opt Au proven and probable reserves; 2.9 million tons, 0.450 opt Au mineral resource 2001: 9 million tons, 0.439 opt Au proven and probable reserves; 13.5 million tons, 0.433 opt Au mineral resource 2002: 9.8 million tons, 0.398 opt Au proven and probable reserves; 12.9 million tons, 0.396 opt Au mineral resource 2003: 3,316,000 tons, 0.467 opt Au proven reserves 5,862,000 tons, 0.326 opt Au probable reserves 1,580,000 tons, 0.435 opt Au measured resource 4,261,000 tons, 0.423 opt Au indicated resource 7,725,000 tons, 0.366 opt Au inferred resource 2004: 7,575,000 tons, 0.392 opt Au proven and probable reserves; 6,268,000 tons, 0.379 opt Au mineral resource 2005 (includes all underground resources at Goldstrike): 7.319 million tons, 0.379 opt Au proven and probable reserves; 3.234 million tons, 0.386 opt Au measured and indicated resource; 3.034 million tons, 0.386 opt Au inferred resource 2006 (includes all underground resources at Goldstrike): 7.662 million tons, 0.370 opt Au proven and probable reserves; 4.143 million tons, 0.338 opt Au measured and indicated resource; 2.159 million tons, 0.301 opt Au inferred resource 2007 (includes all underground resources at Goldstrike): 7.423 million tons, 0.364 opt Au proven and probable reserves; 4.129 million tons, 0.329 opt Au measured and indicated resource; 2.747 million tons, 0.371 opt Au inferred resource 2008 (includes all underground resources at Goldstrike): 6,923 million tons, 0.368 opt Au proven and probable reserves; 4.467 million tons, 0.323 opt Au measured and indicated resource; 3.424 million tons, 0.393 opt Au inferred resource 2009 (includes all underground resources at Goldstrike): 8.998 million tons, 0.318 opt Au proven and probable reserves; 4.436 million tons, 0.334 opt Au measured and indicated resource; 1.858 million tons, 0.341 opt Au inferred resource	1996: 78,442 oz Au 1997-98: 1,421,621 oz Au, 426,030 oz Ag 1999: 977,356 oz Au, 263,225 oz Ag 2000: 805,718 oz Au, 205,000 oz Ag 2001: 712,688 oz Au, 213,370 oz Ag 2002: 640,337 oz Au, 203,574 oz Ag 2003: 551,664 oz Au, 99,614 oz Ag 2004: 561,345 oz Au, 129,520 oz Ag 2005 (includes all underground production at Goldstrike): 509,568 oz Au, 133,979 oz Ag 2006 (includes all underground production at Goldstrike): 477,035 oz Au, 58,345 oz Ag 2007 (includes all underground production at Goldstrike): 413,186 oz Au, 74,000 oz Ag 2008 (includes all underground production at Goldstrike): 424,687 oz Au, 51,434 oz Ag 2009 (includes all underground production at Goldstrike): 388,548 oz Au, 30,198 oz Ag	Popovich and Roberts Mountains Formations	Eocene
MCE (Jerritt Canyon, Independence Mountains district)	2005-2007: 4,400 tons, 0.20 opt Au (underground measured and indicated resource) 7,800 tons, 0.19 opt Au (underground inferred resource)		Hanson Creek and Roberts Mountains Formations	

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Midas (Ken Snyder) Mine (Gold Circle district)	1995: 13 million tons, 0.16 opt Au, 2.7 opt Ag, announced resource, proven Au reserves<500,000 oz 1996: 1.1 million tons, 1.324 opt Au, 14.95 opt Ag 1999: 3.0 million tons, 0.816 opt Au, 9.835 opt Ag proven and probable reserves 2000: 3.4 million tons, 0.63 opt Au, 7.77 opt Ag proven and probable reserves 2002: 3.4 million tons, 0.65 opt Au proven and probable reserves; 400,000 tons 0.46 opt Au measured and indicated mineralized material; 200,000 tons 0.55 opt Au inferred mineralized material 2003: 700,000 tons, 0.83 opt Au proven reserves; 2,700,000 tons, 0.51 opt Au probable reserves; 900,000 tons 0.42 opt Au indicated material 2004: 2.9 million tons, 0.510 opt Au proven and probable reserves; 200,000 tons, 0.58 opt Au indicated resource; 700,000 tons, 0.31 opt Au inferred resource 2005: 1.5 million tons, 0.58 opt Au, proven and probable reserves; 600,000 tons, 0.42 opt Au, inferred resource 2006: 1.2 million tons, 0.47 opt Au, proven and probable reserves (which includes 6,800,000 oz Ag); 800,000 tons, 0.33 opt Au, inferred resource 2007: 1.0 million tons, 0.493 opt Au, proven and probable reserves (which includes 7,500,000 oz Ag); 200,000 tons, 0.345 opt Au, measured and indicated resource; 100,000 tons, 0.3013 opt Au, inferred resource 2008: 900,000 tons, 0.436 opt Au, proven and probable reserves 200,000 tons, 0.186 opt Au, measured and indicated resource; 100,000 tons, 0.321 opt Au, inferred resource 2009: 700,000 tons, 0.425 opt Au, proven and probable reserves (also includes 4.6 Moz Ag) 100,000 tons, 0.193 opt Au, measured and indicated resource; 100,000 tons, 0.248 opt Au, inferred resource	1998: 4,357 oz Au, 55,329 oz Ag 1999: 189,081 oz Au, 1,938,470 oz Ag 2000: 197,800 oz Au, 1,941,989 oz Ag 2001: 198,518 oz Au, 2,393,246 oz Ag 2002: 232,949 oz Au, 2,870,164 oz Ag 2003: 218,966 oz Au, 2,647,374 oz Ag 2004: 219,778 oz Au, 2,471,135 oz Ag 2005: 167,297 oz Au, 2,166,396 oz Ag 2006: 140,884 oz Au, 1,694,060 oz Ag 2007: 79,133 oz Au, 1,040,059 oz Ag 2008: 150,608 oz Au 1,872,883 oz Ag 2009: 123,621 oz Au, 1,634,601 oz Ag	Tertiary volcanic rocks	Miocene
Mill Creek (Jerritt Canyon, Independence Mountains district)	2005-2007: 78,400 tons, 0.12 opt Au (measured and indicated resource)		Hanson Creek and Roberts Mountains Formations	
Murray (incl. Zone 9) (Jerritt Canyon, Independence Mountains district)	2005: 243,300 tons, 0.26 opt Au (proven and probable reserves) 789,200 tons, 0.29 opt Au (measured and indicated resource, includes reserves) 2006: 18,400 tons, 0.266 opt Au (proven and probable reserves); 393,300 tons, 0.290 opt Au (measured and indicated resource, includes reserves); 152,000 tons, 0.220 opt Au (inferred resource) 2007: 393,300 tons, 0.290 opt Au (measured and indicated resource); 152,000 tons, 0.220 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Pie Creek (Jerritt Canyon, Independence Mountains district)	2005-2007: 190,200 tons, 0.16 opt Au (measured and indicated resource) 28,300 tons, 0.14 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Piñon (South Bullion and Dark Star) (Robinson Mountain district)	1996: 38.3 million tons, 0.026 opt Au geologic mineral inventory 2002: 30.6 million tons, 0.026 opt Au, measured, indicated, and inferred resource		Webb Formation siltstone Devils Gate Limestone	
Pony Creek (Robinson Mountain district)	1994:1.1 million tons, 0.057 opt Au (geologic resource) 2004: 32.41 million tons, 0.044 opt Au (inferred resource)			

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Railroad property (POD zone) (Railroad district)	1997: 1.5 million tons, 0.085 opt Au drill-indicated resource			
Rain property (Carlin district)	1982: 3.4 million tons, 0.147 opt Au and 8.3 million tons, 0.083 opt Au			
Gnome deposit	1988: 2.7 million tons, 0.048 opt Au		Webb Formation	Eocene
Emigrant Springs deposit	2005: 1,531,165 oz Au (proven and probable reserves)		Webb Formation	Eocene
Rain deposit	1999: 13,467,000 tons, 0.026 opt Au proven and probable open-pit ore, 411,000 tons, 0.316 proven and probable underground ore	1999: 23,477 oz Au 2000: 25,004 oz Au, 2,539 oz Ag 2001: 43,488 oz Au, 9,887 oz Ag 2002: 20,065 oz Au, 4,042 oz Ag 2003: 5,039 oz Au, 928 oz Ag 2004: 1,956 oz Au, 551 oz Ag 2005: 404 oz Au, 90 oz Ag		
SMZ deposit	1989: 1.6 million tons, 0.019 opt Au (geologic resource)			
Rain district	2000: 13.5 million tons, 0.026 opt Au proven and probable open-pit ore; 308,000 tons, 0.267 opt Au proven and probable underground ore 2001: 13.5 million tons, 0.026 opt Au proven and probable open-pit ore; 21,000 tons, 0.024 opt Au proven and probable underground ore; 1.3 million tons, 0.048 opt Au mineralized material			
REN (Bootstrap district)	2003: 2.1 million tons, 0.43 opt Au (inferred resource) 2005: 2.1 million tons, 0.38 opt Au (indicated resource); 1.4 million tons, 0.37 opt Au (inferred resource) 2006: 2,713,000 tons, 0.37 opt Au (indicated resource); 758,000 tons, 0.47 opt Au (inferred resource) 2007: 2,991,000 tons, 0.37 opt Au (indicated resource); 835,000 tons, 0.47 opt Au (inferred resource)			
Road Canyon (Jerritt Canyon, Independence Mountains district)	2005-2007: 148,600 tons, 0.14 opt Au (measured and indicated resource); 74,300 tons, 0.13 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Storm Mine (Rossi) (Bootstrap district)	1998: 3.1 million tons, 0.371 opt Au resource 2000: 2.7 million tons, 0.345 opt Au resource 2002: 1.9 million tons, 0.335 opt Au measured and indicated resource; 1 million tons, 0.0335 opt Au inferred resource 2005 and 2006: 500,000 tons, 0.449 opt Au (measured and indicated resource) 800,000 tons, 0.376 opt Au, inferred resource	2008: 52,000 oz Au 2009: 64,558 oz Au 50,069 oz Ag	Popovich Formation Bootstrap Limestone Rodeo Creek Formation	
SSX-Steer (Jerritt Canyon, Independence Mountains district)	2005: 1,333,300 tons, 0.25 opt Au (proven and probable reserves) 2,597,500 tons, 0.28 opt Au (measured and indicated resource, includes reserves) 1,052,200 tons, 0.23 opt Au (inferred resource) 2006: 739,400 tons, 0.266 opt Au (proven and probable reserves); 2,332,500 tons, 0.266 opt Au (measured and indicated resource, includes reserves); 929,700 tons, 0.23 opt Au (inferred resource) 2007: 900,000 tons, 0.226 opt Au (proven and probable reserves); 2,561,400 tons, 0.259 opt Au (measured and indicated resource, includes reserves); 959,200 tons, 0.236 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Saval (Jerritt Canyon, Independence Mountains district)	2005: 104,400 tons, 0.23 opt Au (proven and probable reserves) 460,500 tons, 0.25 opt Au (measured and indicated resource, includes reserves) 270,000 tons, 0.25 opt Au (inferred resource) 2006: 120,200 tons, 0.246 opt Au (proven and probable reserves); 369,300 tons, 0.254 opt Au (measured and indicated resource, includes reserves); 191,200 tons, 0.238 opt Au (inferred resource) 2007: 120,200 tons, 0.246 opt Au (proven and probable reserves); 379,800 tons, 0.252 opt Au (measured and indicated resource, includes reserves); 107,400 tons, 0.206 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Smith (Jerritt Canyon, Independence Mountains district)	2005: 949,300 tons, 0.29 opt Au (proven and probable reserves) 1,863,300 tons, 0.28 opt Au (measured and indicated resource, includes reserves) 677,000 tons, 0.24 opt Au (inferred resource) 2006: 269,000 tons, 0.332 opt Au (proven and probable reserves); 1,064,400 tons, 0.290 opt Au (measured and indicated resource, includes reserves); 541,600 tons, 0.231 opt Au (inferred resource) 2007: 954,100 tons, 0.282 opt Au (proven and probable reserves); 1,236,900 tons, 0.278 opt Au (measured and indicated resource, includes reserves); 534,000 tons, 0.221 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Smith East (Jerritt Canyon, Independence Mountains district)	2006: 997,400 tons, 0.281 opt Au (measured and indicated resource, includes reserves) 120,400 tons, 0.264 opt Au (inferred resource) 2007: 1,065,500 tons, 0.287 opt Au (measured and indicated resource); 125,200 tons, 0.280 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
South Arturo (Bootstrap district)	2006: 12,644,000 tons, 0.060 opt Au (indicated resource) 786,000 tons, 0.053 opt Au (inferred resource) 2007: 17,928,000 tons, 0.070 opt Au (indicated resource); 612,000 tons, 0.022 opt Au (inferred resource) 2008: 22,114,000 tons, 0.045 opt Au (indicated resource); 1,952,000 tons, 0.013 opt Au (inferred resource) 2009: 26,314,000 tons, 0.051 opt Au (proven and probable reserve) 3,377,000 tons, 0.048 opt Au (indicated resource); 2,539,000 tons, 0.018 opt Au (inferred resource)		Popovich Formation Bootstrap Limestone Rodeo Creek Formation	

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Starvation Canyon (Jerritt Canyon, Independence Mountains district)	2005: 400,500 tons, 0.30 opt Au (probable reserves) 676,400 tons, 0.28 opt Au (measured and indicated resource, includes reserves) 51,400 tons, 0.31 opt Au (inferred resource) 2006: 369,600 tons, 0.305 opt Au (probable reserves); 636,500 tons, 0.290 opt Au (measured and indicated resource, includes reserves); 51,200 tons, 0.278 opt Au (inferred resource) 2007: 571,600 tons, 0.282 opt Au (probable reserves); 697,300 tons, 0.287 opt Au (measured and indicated resource, includes reserves) 25,500 tons, 0.252 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Trout Creek (Contact district)	1988: 1.5 million tons, 0.04 opt Au	1988: exploration	Miocene sedimentary rocks	
Tuscarora (Dexter) (Tuscarora district)	1987: 2 million tons, 0.039 opt Au, 1.9 opt Ag 1988: 1.8 million tons, 0.037 opt Au, 0.74 opt Ag	1896-1902: 29,940 oz Au, 28,543 oz Ag 1987-90: 34,163 oz Au, 189,865 oz Ag	Eocene rhyolitic ignimbrite and andesite	Eocene
Waterpipe II (Jerritt Canyon, Independence Mountains district)	2005-2007: 37,400 tons, 0.21 opt Au (underground inferred resource)		Roberts Mountains Formation	
West Mahala (Jerritt Canyon, Independence Mountains district)	2005 and 2006: 368,100 tons, 0.22 opt Au (underground measured and indicated resource); 141,900 tons, 0.21 opt Au underground inferred resource) 2007: 197,500 tons, 0.218 opt Au (underground indicated resource); 129,600 tons, 0.206 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Winters Creek (Jerritt Canyon, Independence Mountains district)	1986: 1.4 million tons, 0.146 opt Au 2005-2007: 148,900 tons, 0.22 opt Au underground measured and indicated resource; 37,200 tons, 0.2 opt Au, underground inferred resource		lower Paleozoic carbonate rocks	Eocene
Wright Window (Jerritt Canyon, Independence Mountains district)	1986: 1.3 million tons, 0.095 opt Au 2005-2007: 32,600 tons, 0.226 opt Au, (probable reserves); 97,800 tons, 0.16 opt Au, (measured and indicated resource, includes reserves); 19,000 tons, 0.23 opt Au (inferred resource)	1992: 3,500 oz Au	lower Paleozoic carbonate rocks	Eocene
ESMERALDA COUNTY				
Boss (Gilbert district)	1987: 500,000 tons, 0.07 opt Au 1990: *reserves*-637,500 tons, 0.023 opt Au *geologic resource*-31,000 oz Au 1996: see Castle		Ordovician sedimentary rocks	Miocene?
Castle (includes Boss) (Gilbert district)	1996: 3.7 million tons, 0.03 opt Au 1997: 10 million tons, 0.03 opt Au resource 2000: 215,000 oz Au indicated resource and 93,000 oz Au inferred resource		Ordovician Palmetto Formation	
Gemfield (Goldfield district)	1996: 9.5 million tons, 0.04 opt Au 1998: 500,000 oz, 0.04 opt Au 2003: see Goldfield project 2004: 16,853,000 tons, 0.032 opt Au (measured and indicated resource); 1,001,000 tons, 0.022 opt Au (inferred resource) 2006: 12,459,000 tons, 0.031 opt Au (measured and indicated resource); 88,000 tons, 0.116 opt Au (inferred resource)		Sandstorm Rhyolite	21 Ma?

MAJOR PRECIOUS-METAL DEPOSITS, ESMERALDA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Goldfield Project (Goldfield district) (*see Gemfield, Goldfield Main, and McMahon Ridge*)	1983: 1.75 million tons, 0.087 opt Au 1994: 3.48 million tons, 0.071 opt Au 2003: 23,410,200 tons, 0.031 opt Au (measured and indicated resource) 10,239,100 tons 0.024 opt Au inferred resource (includes Goldfield Main, McMahon Ridge, and Gemfield) 2006: 16,856,000 tons, 0.034 opt Au (measured, indicated, and inferred resource, includes McMahon Ridge and Gemfield)	1903-45: 4.19 million oz Au, 1.45 million oz Ag 1989-97: 28,373 oz Au	andesite, rhyodacite, rhyolite	21 Ma
Goldfield Main (Goldfield district)	2004: 6,651,000 tons, 0.036 opt Au measured and indicated resource; 2,129,000 tons, 0.038 opt Au inferred resource			
Hasbrouck (Divide district)	1982: 5 million tons 0.06 opt Au, 1.5 opt Ag 1986: 12.9 million tons, 0.0291 opt Au, 0.59 opt Ag 1998: 7.7 million tons, 0.036 opt Au, 0.7 opt Ag 2003: 26,036,00 tons, 0.023 opt Au (indicated resource); 8,200,000 tons, 0.021 opt Au (inferred resource)		Siebert Formation tuff and volcaniclastic rocks	16 Ma
Hill of Gold deposit (Divide district)	1988: 500,000 tons, 0.04 opt Au, 0.40 opt Ag 1996: 1.6 million tons, 0.026 opt Au		Miocene silicic tuff	16 Ma
Mary-Drinkwater (Silver Peak district)	1991: 531,300 tons, 0.124 opt Au	1991: 25,000 oz Au, 8,000 oz Ag	Wyman Formation	Mesozoic?
McMahon Ridge (Goldfield district)	2004: 8,200,000 tons, 0.035 opt Au (measured and indicated resource) 171,000 tons, 0.019 opt Au (inferred resource) 2006: 4,138,000 tons, 0.042 opt Au (measured and indicated resource); 172,000 tons, 0.038 opt Au (inferred resource)			
Mineral Ridge (Silver Peak district)	1995: 5.2 million tons, 0.068 opt Au proven and probable reserves (includes Mary-Drinkwater) 1998: 4 million tons, 0.06 opt Au; 241,000 oz Au 2000: 2.84 million tons, 0.074 opt Au minable reserves 2002: 2.66 million tons, 0.079 opt Au total reserves 2003: 8.3 million tons, 0.061 opt Au resource (includes 2.66 million tons, 0.079 opt Au reserves)	1997: 13,793 oz Au, 7,907 oz Ag 1998: 8,582 oz Au, 4,877 oz Ag 1999: 27,145 oz Au, 19,915 oz Ag 2000: 2,200 oz Au, 1,000 oz Ag 2001: 1,399 oz Au, 424 oz Ag 2002: 397 oz Au, 396 oz Ag 2003: 675 oz Au, 704 oz Ag 2004: 3,638 oz Au, 3,062 oz Ag 2005: 1,589 oz Au, 1,073 oz Ag	Wyman Formation	Mesozoic?
Monte Cristo (Gilbert district)	2006: 363,760 tons, 0.190 opt Au, 0.583 opt Ag (inferred resource)	late 1980s: 300,000 tons, 0.072 opt Au	Tertiary andesite, lithic tuff	Tertiary
Tip Top (Fish Lake Valley district)	1997: 109,000 tons, 0.103 opt Au, 0.88 opt Ag indicated resource 1998: 168,000 tons, 0.088 opt Au inferred geologic resource 2009: 388,920 tons, 0.096 opt Au (indicated resource) 323,230 tons, 0.072 opt Au (inferred resource)		Tertiary quartz latite	
Three Hills (Tonopah district)	1996: 3.2 million tons, 0.036 opt Au 1997: 6.3 million tons, 0.023 opt Au 2003: 5,736,000 tons, 0.023 opt Au (indicated resource)		Miocene Siebert Formation and Oddie Rhyolite	
Weepah (Weepah district)	1986: 200,000 tons, 0.1 opt Au, 0.4 opt Ag	1986-87: 58,000 oz Au	Wyman Formation	Cretaceous

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
EUREKA COUNTY				
Afgan (Antelope district)	1996: 80,000 oz Au drill-indicated resource 1999: 2.8 million tons, 0.037 opt Au oxide resource 2004: 1.85 million tons, 0.027 opt Au (indicated resource) 1.29 million tons, 0.026 opt Au (inferred resource)		Webb Formation	
Betze-Post (Lynn district)	1988: 128.4 million tons, 0.095 opt Au 1999: 135.6 million tons, 0.153 opt Au proven and probable reserves; 23.3 million tons, 0.099 opt Au mineralized material 2000: 116.4 million tons, 0.155 opt Au proven and probable; 55.9 million tons, 0.063 opt Au mineral resource 2001: 108.9 million tons, 0.151 opt Au proven and probable; 49.9 million tons, 0.069 opt Au mineral resource 2002: 107.1 million tons, 0.150 opt Au proven and probable reserves; 47.6 million tons, 0.070 opt Au mineral resource 2003: 61,551,000 tons, 0.128 opt Au proven reserves; 48,191,000 tons, 0.162 opt Au probable reserves; 14,077,000 tons, 0.059 opt Au measured resource; 23,326,000 tons, 0.061 opt Au indicated resource; 323,000 tons, 0.065 opt Au inferred resource 2004: 123,334,000 tons, 0.131 opt Au proven and probable reserves; 22,318,000 tons, 0.050 opt Au mineral resource 2005: 114,512,000 tons, 0.128 opt Au (proven and probable reserves); 21,115,000 tons, 0.050 opt Au (measured and indicated resource); 417,000 tons, 0.089 opt Au (inferred resource) 2006: 105,206,000 tons, 0.125 opt Au (proven and probable reserves); 20,184,000 tons, 0.050 opt Au (measured and indicated resource); 489,000 tons, 0.078 opt Au (inferred resource) 2007: 94,914,000 tons, 0.128 opt Au (proven and probable reserves); 34,532,000 tons, 0.052 opt Au (measured and indicated resource); 5,014,000 tons, 0.064 opt Au (inferred resource) 2008: 86,254,000 tons, 0.119 opt Au (proven and probable reserves); 15,751,000 tons, 0.055 opt Au (measured and indicated resource); 479,000 tons, 0.092 opt Au (inferred resource) 2009: 82,902,000 tons, 0.112 opt Au (proven and probable reserves); 16,687,000 tons, 0.052 opt Au (measured and indicated resource); 3,568,000 tons, 0.116 opt Au (inferred resource)	1974: 302,807 oz Au 1980-88: 440,000 oz Au 1989-92: 2,214,508 oz Au, 92,347 oz Ag 1993: 1,439,929 oz Au 1994-98: 8,920,871 oz Au, 372,403 oz Ag 1999: 1,130,094 oz Au, 65,804 oz Ag 2000: 1,646,640 oz Au, 52,000 oz Ag 2001: 1,549,975 oz Au, 261,261 oz Ag 2002: 1,409,984 oz Au, 135,716 oz Ag 2003: 1,559,401 oz Au, 115,473 oz Ag 2004: 1,381,315 oz Au, 130,609 oz Ag 2005: 1,514,320 oz Au, 114,248 oz Ag 2006: 1,432,698 oz Au, 121,032 oz Ag 2007: 1,215,447 oz Au, 140,923 oz Ag 2008: 1,281,450 oz Au, 152,886 oz Ag 2009: 901,002 oz Au 120,736 oz Ag		Eocene
Buckhorn property (Buckhorn district)	1984: 5 million tons, 0.044 opt Au, 0.585 opt Ag 1990: 700,000 tons, 0.05 opt Au; *geologic resource*-200,350 oz Au 1993: *geologic resource*-1.1 million tons, 0.11 opt Au	1988-93: 109,422 oz Au, 409,887 oz Ag	basaltic andesite, sinter, silicified sedimentary rocks	14.6 Ma
Buckhorn South/ Zeke deposit (Buckhorn district)	1989: 2 million tons, 0.056 opt Au, 0.224 opt Ag 1998: 2.4 million tons, 0.046 opt Au		lower Paleozoic rocks	
Cabin Creek (Antelope district)	2009-2010 (Feb., 0.012 opt Au cut-off grade) 3.2 million tons, 0.024 opt Au (indicated resource) 0.1 million tons, 0.015 opt Au (inferred resource)			

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Carlin North, Newmont (Lynn district)				
Blue Star	1987: 1.95 million tons, 0.066 opt Au 1989: *geologic resource*-22.2 million tons, 0.030 opt Au	1974-84: intermittent 1988-2006: included in Newmont Gold production at the end of this section	lower Paleozoic sandy siltstone and carbonate rocks, granodiorite	Eocene
Bobcat	1988: *geologic resource*-17.7 million tons, 0.029 opt Au		lower Paleozoic rocks	Eocene
Bullion Monarch	1987: 1 million tons, 0.10 opt Au	1977-84: 17,779 oz Au	lower Paleozoic sedimentary rocks	Eocene
Deep Star	1996: 1.4 million tons, 0.8765 opt Au proven and probable reserves	1995: 2,800 oz Au 1996: 93,400 oz Au 1997-2005: included in Newmont Gold production at the end of this section	Popovich Formation	Eocene
Genesis	1989: *geologic resource*-35.8 million tons, 0.044 opt Au 1990: 32 million tons, 0.047 opt (includes Blue Star) 2004: 1,065,000 oz Au (proven and probable reserves)	1986: production commenced 1988-2006: included in Newmont Gold production at the end of this section	Ordovician-Devonian limestone, argillite, chert	Eocene
Genesis/North Star	1996: 22.7 million tons, 0.034 opt Au proven and probable reserves; 11 million	1994-95: 684,600 oz Au 1996-2006: included in Newmont Gold production at the end of this section	Ordovician-Devonian limestone, argillite, chert	Eocene
Genesis Complex	2000:14.1 million tons, 0.026 opt Au proven and probable open-pit reserves 2004: 1,065,000 oz Au (proven and probable reserves) 2005: 1,193,058 oz Au (proven and probable reserves)			
Leeville	2004: 2,612,000 oz Au (proven and probable reserves) 2005: 2,433,000 oz Au (proven and probable reserves)	2005-2008: included in Newmont Gold production at the end of this section	Roberts Mountains Formation	Eocene
North Lantern	2004: 199,940 oz Au			
North Star	1989: *geologic resource*-6.9 million tons, 0.052 opt Au 1990: 3.9 million tons, 0.052 opt Au	1988: 4,250 oz Au 1989-2005: included in Newmont Gold production at the end of this section	lower Paleozoic sedimentary rocks	Eocene
Post/Goldbug	1996: 25.6 million tons, 0.190 opt Au proven and probable reserves; 43.6 million tons, 0.079 opt Au mineralized material	1999-2005: included in Newmont Gold production at the end of this section	lower Paleozoic sedimentary rocks	Eocene
Deep Post	2000: 3.1 million tons, 0.814 opt Au proven and probable underground reserves 2004 (includes Deep Star) 1,462,000 oz Au (proven and probable reserves) 2005 (includes Deep Star) 942,000 oz Au (proven and probable reserves)	2005-2006: included in Newmont Gold production at the end of this section		
Turf	1996: 2.5 million tons, 0.367 opt Au mineralized material	included in Newmont Gold production at the end of this section	Roberts Mountains Formation	Eocene
West Leeville (Newmont)	1996: 2 million tons, 0.377 opt Au proven and probable reserves; 581,000 tons 0.354 opt Au mineralized material	1995-96: 272,000 oz Au 1997-2000: included in Newmont Gold production at the end of this section	Roberts Mountains Formation	Eocene
West Leeville (Newmont-Barrick)	1996: 7.1 million tons, 0.425 opt Au proven and probable reserves; 500,000 tons 0.328 opt Au mineralized material		Roberts Mountains Formation	Eocene
Carlin Mine	1965: 11 million tons, 0.32 opt Au	1965-86: 3.8 million oz Au		

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Carlin/Pete/Lantern	1995: 14.8 million tons, 0.031 opt Au 1996: 13.7 million tons, 0.046 opt Au proven and probable reserves; 14.7 million tons, 0.046 opt Au mineralized material 2004: 940,040 oz Au (proven and probable reserves) 2005: 1,044,841 oz Au (proven and probable reserves)	1994-96: 68,700 oz Au 1997-2006: included in Newmont Gold production at the end of this section	Roberts Mountains Formation	Eocene
Carlin Underground	2004: 163,000 oz Au 2005: 123,000 oz Au (proven and probable reserves)			
Carlin North-other	2000: 19.8 million tons, 0.052 opt Au, proven and probable open-pit reserves			
Carlin North area total	2000: 8.2 million tons, 0.495 opt Au, proven and probable underground reserves			
Carlin North area, total open-pit	2001: 32.6 million tons, 0.044 opt Au, proven and probable reserves; 13.0 million tons, 0.039 opt Au mineralized material			
Carlin North area, total underground	2001: 10.9 million tons, 0.56 opt Au, proven and probable reserves; 2.1 million tons, 0.55 opt Au mineralized material			
Carlin South, Newmont (Maggie Creek district)				
Gold Quarry/Mac/Tusc	1982: 25.1 million tons, 0.106 opt Au and 150 million tons, 0.036 opt Au 1987: 197.8 million tons, 0.042 opt Au 1990: 212.6 million tons, 0.042 opt Au, *geologic resource*-534.3 million tons, 0.037 opt Au 1996: 174.8 million tons, 0.046 opt Au proven and probable reserves; 51.9 million tons, 0.058 opt Au mineralized material 2004: 5,984,000 oz (proven and probable reserves) 2005: 6,554,297 oz (proven and probable reserves)	1981: 6,000 oz Au 1982: 19,000 oz Au 1983: 74,000 oz Au 1984: 68,200 oz Au 1985: 136,200 oz Au 1986: 309,800 oz Au 1987: 446,600 oz Au 1988-93: included in Newmont Gold production 1994-96: 2,978,000 oz Au 1997-2008: included in Newmont Gold production at the end of this section	Ordovician to Devonian chert, shale, siltstone, and impure carbonate rocks; in part, Vinini Formation	Eocene
Mike	1999: 408,000,00 tons, .006 opt Au 151,000,000 tons, 0.10 % Cu 19,000,000 tons, 1.00 % Zn (drill-indicated mineral inventory)			
Tusc	1988: *geologic resource*-15.8 million tons, 0.059 opt Au 1990: 13.3 million tons, 0.062 opt Au	included in Newmont Gold production at the end of this section	lower Paleozoic sedimentary rocks	Eocene
Carlin South area	2000: 75.2 million tons, 0.059 opt Au proven and probable open-pit reserves			
Carlin South open-pit	2001: 61.3 million tons, 0.062 opt Au proven and probable reserves; 24.6 million tons, 0.028 opt Au mineralized material			
Chukar Footwall underground	2001: 278,000 tons, 0.49 opt Au proven and probable reserves; 115,000 tons, 0.46 opt Au mineralized material 2004: 172,000 oz Au (proven and probable reserves) 2005: 256,000 oz Au (proven and probable reserves)			

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Carlin North and South combined (includes all Newmont's Carlin properties)				
Carlin open pit	2002: 181.8 million tons, 0.042 opt Au proven and probable reserves; 9.5 million tons, 0.028 opt Au measured and indicated mineralized material; 9.3 million tons, 0.035 opt Au inferred mineralized material 2003: 17,500,000 tons, 0.052 opt Au proven reserves 203,300,000 tons, 0.044 probable reserves 1,000,000 tons 0.035 measured material; 11,200,000 tons 0.024 indicated material; 10,400,000 tons 0.034 opt Au inferred material 2004: 201,600,000 tons, 0.047 opt Au proven and probable reserves; 13,200,000 tons, 0.022 opt Au indicated material; 7,700,000 tons, 0.034 opt Au inferred material 2005: 238.3 million tons, 0.043 opt Au (proven and probable reserves); 28.1 million tons, 0.04 opt Au (measured and indicated resource); 4.2 million tons, 0.024 opt Au (inferred resource) 2006: 271.6 million tons, 0.042 opt Au (proven and probable reserves); 35.1 million tons, 0.035 opt Au (measured and indicated resource); 6.3 million tons, 0.022 opt Au (inferred resource) 2007: 213.5 million tons, 0.045 opt Au (proven and probable reserves); 14.6 million tons, 0.020 opt Au (measured and indicated resource); 3.7 million tons, 0.037 opt Au (inferred resource) 2008: 202.4 million tons, 0.045 opt Au (proven and probable reserves); 88.4 million tons, 0.040 opt Au (measured and indicated resource); 21.1 million tons, 0.023 opt Au (inferred resource) 2009: 259.3 million tons, 0.044 opt Au (proven and probable reserves); 28.8 million tons, 0.021 opt Au (measured and indicated resource); 10.4 million tons, 0.034 opt Au (inferred resource)	2004-2009: included in Newmont Gold production at the end of this section		Eocene
Carlin underground	2002: 10 million tons, 0.57 opt Au proven and probable reserves; 2.6 million tons, 0.50 opt Au measured and indicated mineralized material; 200,000 tons, 0.53 opt Au inferred mineralized material 2003: 2,700,000 tons, 0.670 opt Au proven reserves; 6,100,000 tons, 0.500 opt Au probable reserves; 3,700,000 tons 0.480 opt Au inferred material 2004: 8,700,000 tons, 0.510 opt Au proven and probable reserves; 100,000 tons, 0.260 opt Au indicated material; 3,900,000 tons, 0.470 opt Au inferred material 2005: 7.7 million tons, 0.49 opt Au (proven and probable reserves); 300,000 tons, 0.33 opt Au (measured and indicated resource); 3.7 million tons, 0.46 opt Au (inferred resource) 2006: 7.4 million tons, 0.44 opt Au (proven and probable reserves); 1.1 million tons, 0.28 opt Au (measured and indicated resource); 3.0 million tons, 0.47 opt Au (inferred resource) 2007: 7.2 million tons, 0.388 opt Au (proven and probable reserves); 110,000 tons, 0.482 opt Au (measured and indicated resource); 2.6 million tons, 0.480 opt Au (inferred resource) 2008: 11.7 million tons, 0.313 opt Au (proven and probable reserves); 340,000 tons, 0.330 opt Au (measured and indicated resource); 3.1 million tons, 0.327 opt Au (inferred resource) 2009: 9.7 million tons, 0.311 opt Au (proven and probable reserves); 810,000 tons, 0..180 opt Au (measured and indicated resource); 7.4 million tons, 0.289 opt Au (inferred resource)	2004-2009: included in Newmont Gold gold production at the end of this section		Eocene
Gold Bar (Antelope district)	1984: 2.8 million tons, 0.09 opt Au 1990: mined out in December 1994: 240,000 oz Au 1995: 190,000 oz Au 2001: 473,000 oz Au in 6 deposits 2002: 3.6 million tons, 0.100 opt Au resource	1987-90: 238,262 oz Au 1991: 80,727 oz Au, 3,000 oz Ag 1992-94: 155,080 oz Au	Devonian Nevada Formation	Eocene?

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Gold Canyon (Antelope district)	1992: reserves-86,500 oz Au, *geologic resource*-131,000 oz Au 1993: 770,000 tons, 0.080 opt Au 2001: *see* Gold Bar 2002: 2.5 million tons, 0.056 opt Au resource	reported with Gold Bar	Devonian Upper Denay Limestone Formation	Eocene?
Gold Pick (Antelope district)	1988: 10 million tons, 0.06 opt Au 1993: 1.4 million tons, 0.079 opt Au 2001: *see* Gold Bar 2002: 5 million tons, 0.057 opt Au measured mineral resource 2005: 7,874,000 tons, 0.041 opt Au (indicated resource)	reported with Gold Bar	Devonian McColley Canyon Formation	Eocene?
Gold Ridge (Antelope district)	1988: 4 million tons, 0.06 opt Au 1993: 426,000 tons, 0.059 opt Au 2001: *see* Gold Bar 2002: 584,164 tons, 0.046 opt Au resource	reported with Gold Bar	Devonian McColley Canyon Formation	Eocene?
Gold Pick and Gold Ridge (combined) (Antelope district)	2009 (Feb, 0.012 opt Au cut-off grade): 21.5 million tons, 0.032 opt Au (measured and indicated resource) 8.7 million tons, 0.021 opt Au 2010 (0.012 opt Au cut-off grade): 33.3 million tons, 0.027 opt Au (measured and indicated and resource) 1.2 million tons, 0.016 opt Au (inferred resource)			
Goldstone (Antelope district)	1988: 1.7 million tons, 0.08 opt Au 1993: 130,928 tons, 0.104 opt Au 2001: *see* Gold Bar	reported with Gold Bar	Devonian Upper Denay Limestone Formation	Eocene?
Horse Canyon (Cortez district)	1984: 3.94 million tons, 0.055 opt Au 1988: included in Cortez Joint Venture figures	1984: 40,000 oz Au 1988-93: included with Cortez Joint Venture	Wenban Limestone	35 Ma?
Hunter (Antelope district)	2009 (Feb., 0.013 opt Au cut-off grade) 0.5 million tons, 0.031 opt Au (indicated resource) 0.1 million tons, 0.015 opt Au (inferred resource)			
Ratto Canyon (Lookout Mountain) (Eureka district)	1984: ~200,000 oz Au (entire Ratto Ridge area): 2006: 836,000 tons, 0.24 opt Au (measured and indicated resource)	1987-88: 17,000 oz Au	Dunderberg Shale, Hamburg Dolomite	Eocene
Rock Creek (Eureka-Lander Co. line)	1997: 800,000 tons, 0.045 opt Au		Tertiary latite tuff	
Rodeo projects (Rodeo, Griffin, Goldbug, North Betze) (Lynn district)	1998: 2.9 million tons, 0.487 opt Au proven and probable reserves; 5.8 million tons, 0.302 opt Au mineralized material 1999: 5.8 million tons, 0.466 opt Au, proven and probable reserves; 13.0 million tons, 0.270 opt Au mineralized material 2000: 9.2 million tons, 0.414 opt Au proven and probable; 7.4 million tons, 0.333 opt Au mineral resource 2005-2006: reserves are combined with Meikle reserves	included with Meikle production, Elko County		Eocene

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Ruby Hill (Eureka district)	1994: *geologic resource*-20 million tons, 0.08 opt Au 1995: 7.62 million tons, 0.099 opt Au 1999: 3.77 million tons, 0.110 opt Au proven and probable; 7.33 million tons, 0.072 opt Au mineralized material 2000: 2.7 million tons, 0.105 opt Au proven and probable reserves; 7.3 million tons, 0.072 opt Au mineralized material 2004: (East Archimedes) 17,093,000 tons, 0.059 opt Au proven and probable reserves; 3,049,000 tons, 0.061 opt Au mineral resource 2006: (East Archimedes) 19,479,000 tons, 0.055 opt Au (proven and probable reserves); 601,000 tons, 0.088 opt Au (measured and indicated resource) 2007: (East Archimedes) 18,763,000 tons, 0.055 opt Au (proven and probable reserves); 3,202,000 tons, 0.076 opt Au (measured and indicated resource); 6,000 tons, 0.333 opt Au, (inferred resource) 2008: (East Archimedes) 18,844,000 tons, 0.044 opt Au (proven and probable reserves); 11,919,000 tons, 0.04 opt Au (measured and indicated resource); 3,495,000 tons, 0.037 opt Au, (inferred resource) 2009: 13,933,000 tons, 0.050 opt Au (proven and probable reserves); 8,960,000 tons, 0.057 opt Au (measured and indicated resource); 2,928,000 tons, 0.051 opt Au, (inferred resource)	1997-98: 133,100 oz Au, 8,686 oz Ag 2000: 125,193 oz Au, 7,984 oz Ag 1999: 123,841 oz Au, 7,688 oz Ag 2001: 134,737 oz Au, 9,315 oz Ag 2002: 135,448 oz Au, 9,750 oz Ag 2003: 18,134 oz Au, 2,441 oz Ag 2004: 6,057 oz Au, 1,868 oz Ag 2007:142,856 oz Au, 8,368 oz Ag 2008: 102,553 oz Au, 7,572 oz Ag 2009: 103,523 oz Au, 39,110 oz Ag	Goodwin Limestone	
Tonkin Springs (Antelope district)	1983: 1.84 million tons, 0.089 opt Au, 0.204 opt Ag 1987: *oxide*-1.5 million tons, 0.05 opt Au; *sulfide*-2.5 million tons, 0.09 opt Au 1991: 9 million tons, 0.05 opt Au 1999: 30.7 million tons, 0.045 opt Au resource 2006: 29,672,000 tons, 0.043 opt Au (measured and indicated resource); 3,466,000 tons, 0.044 opt Au, (inferred resource) 2008 (May): 35,584,000 tons, 0.041 opt Au (measured and indicated resource) 9,290,000 tons, 0.033 opt Au, (inferred resource)	1987-88: 10,265 oz Au 1989-90: 3,821 oz Au, 1,872 oz Ag	Vinini Formation	Eocene?
Windfall (Eureka district)	1988: 3 million tons, 0.03 opt Au 1995: mined out	1908-16: 24,000 oz Au 1975-84: 90,000 oz Au 1988: 6,380 oz Au, 59 oz Ag	Hamburg Dolomite	Eocene or Oligocene
HUMBOLDT COUNTY				
Adelaide Crown (Gold Run district)	1989: south pit-585,000 tons, 1.313 opt Ag, 0.043 opt Au; additional area: 165,000 tons, 0.015 opt Au, 1.10 opt Ag	1990-91: 4,917 oz Au, 53,474 oz Ag	Preble Formation	Tertiary
Ashdown (Vicksburg district)	1987: 1.16 million tons, 0.125 opt Au 1992: 1.1 million tons, 0.12 opt Au 2002: 100,000 oz Au		Mesozoic granite	Mesozoic
Buckskin (National district)	1997: 50,221 oz Au, 466,243 oz Ag estimated resource		Miocene rhyolite flows and flow breccias	16 Ma
Chimney Creek (Potosi district)	1988: proven, probable-26.9 million tons, 0.068 opt Au; inferred in south pit-2.1 million oz Au 1993: *see* Twin Creeks	1987-88: 300,000 oz Au 1989: 222,556 oz Au, 55,953 oz Ag 1990: 220,000 oz Au 1991-92: 476,034 oz Au, 213,463 oz Ag 1993: *see* Twin Creeks	upper Paleozoic sedimentary rocks	

MAJOR PRECIOUS-METAL DEPOSITS, HUMBOLDT COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Converse/Redline (Buffalo Valley district)	2003: 77,459,000 tons, 0.020 opt Au measured and indicated resource 2004: 263 million tons, 0.0150 opt Au, 0.0582 opt Ag (measured and indicated resource) 35 million tons, 0.0143 opt Au, 0.0524 opt Ag		Havallah Formation, granodiorite	Tertiary
Getchell (Potosi district)	1989: 8.1 million tons, 0.154 opt Au mill grade and 1.43 million tons, 0.049 opt Au heap-leach ore; additional geologic resource: 5.7 million tons, 0.092 opt Au sulfide and 2.6 million tons, 0.055 opt Au oxide 1999: 18.1 million tons, 0.359 opt Au 2000: 2.8 million oz Au measured resource, 5.5 million oz Au indicated resource, and 6.7 million oz inferred resource 2002: 2.69 million oz Au proven and probable reserves; 1.51 million oz Au measured and indicated mineral resource 2003: (Turquoise Ridge) 6,000,000 tons, 0.570 opt Au proven reserves; 2,400,000 tons, 0.620 opt Au probable reserves; 4,400,000 tons, 0.300 opt Au measured material; 2,800,000 tons, 0.400 opt Au indicated material; 4,800,000 tons, 0.490 opt Au inferred material 2005: Turquoise Ridge Mine (included Turquoise Ridge and Getchell Footwall deposits) 7.6 million tons, 0.56 opt Au (proven and probable reserves); 5.6 million tons, 0.42 opt Au (measured and indicated resource); 400,000 tons, 0.54 opt (inferred resource) 2006: Turquoise Ridge Mine (included Turquoise Ridge and Getchell Footwall deposits) 8.436 million tons, 0.544 opt Au (proven and probable reserves); 4.801 million tons, 0.432 opt Au (measured and indicated resource); 1.961 million tons, 0.493 opt (inferred resource) 2007: Turquoise Ridge Mine (included Turquoise Ridge and Getchell Footwall deposits) 11.239 million tons, 0.458 opt Au (proven and probable reserves); 3.291 million tons, 0.409 opt Au (measured and indicated resource); 2.000 million tons, 0.444 opt (inferred resource) 2008: Turquoise Ridge Mine 10.614 million tons, 0.501 opt Au (proven and probable reserves); 3.289 million tons, 0.435 opt Au (measured and indicated resource); 4.440 million tons, 0.505 opt (inferred resource) 2009: Turquoise Ridge Mine 10.680 million tons, 0.507 opt Au (proven and probable reserves); 2.307 million tons, 0.431 opt Au (measured and indicated resource); 5.033 million tons, 0.456 opt (inferred resource)	1938-50, 1962-67: 788,875 oz Au 1987-88: ~35,000 oz Au 1989: 120,730 oz Au, 9,407 oz Ag 1990-91: 372,987 oz Au 1992-95: 790,600 oz Au, 258,700 oz Ag 1996-97: 348,517 oz Au 1998: 175,302 oz Au, 52,490 oz Ag 1999: 111,000 oz Au 2002: 54,600 oz Au, 5,400 oz Ag 2003: 93,337 oz Au 2004: 162,637 oz Au 2005: 208,492 oz Au, 54,419 oz Ag 2006: 233,127 oz Au, 30,473 oz Ag 2007: 251,133 oz Au 2008: 168,808 oz Au 2009: 177,333 oz Au	Comus and Preble Formations, dikes, granodiorite	37-41 Ma
Hycroft formerly Crofoot/Lewis) (Sulphur district)	1988: 25 million tons, 0.025 opt Au 1999: 23.8 million tons, 0.0204 opt Au proven and probable reserves; 2.3 million tons, 0.0177 opt Au indicated reserves 2000: 41.9 million tons, 0.0196 opt Au measured and indicated resource; 14.1 million tons, 0.0152 opt Au inferred resource 2004: 47,479,000 tons, 0.016 opt Au measured and indicated; 12,029,000 tons, 0.011 opt Au inferred resource 2005: 33.32 million tons, 0.02 opt Au (proven and probable reserves) 52.7 million tons, 0.019 opt Au (measured and indicated resource) 8.7 million tons, 0.015 opt Au (inferred resource) 2007: 33.320 million tons, 0.020 opt Au (proven and probable reserves, January 2008); 19.780 million tons, 0.018 opt Au (measured and indicated resource, January 2008); 283.392 million tons, 0.019 opt Au (inferred resource, May 2008)	1988: 75,800 oz Au 1989-98: 868,544 oz Au, 2,717,170 oz Ag 1999: 40,075 oz Au, 183,190 oz Ag 2000: 13,493 oz Au, 38,418 oz Ag 2001: 3,232 oz Au, 2,000 Ag 2002: 1,771 oz Au, 217 oz Ag 2003: 644 oz Au, 100 oz Ag 2004: 61 oz Au 2008: 1,000 oz Au, 3,000 oz Ag 2009: 53,189 oz Au, 65,753 oz Ag	Camel conglomerate, rhyolite dikes	1-2 Ma

MAJOR PRECIOUS-METAL DEPOSITS, HUMBOLDT COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
	2008 (October 2008): 73,159,508 tons, 0.016 opt Au (proven and probable reserves; 141.3 million tons, 0.014 opt Au (measured and indicated resource, 0.005 opt Au cut-off grade); 180.2 million tons, 0.012 opt Au (oxide inferred resource, 0.005 opt Au cut-off grade) 199.4 million tons, 0.20 opt Au (sulfide inferred resource, 0.013 opt Au cut-off grade) 2010: 177,228,000 tons, 0.014 opt Au, 0.18 opt Ag (proven and probable oxide reserves) 366,991,000 tons, 0.013 opt Au, 0.22 opt Ag (measured and indicated oxide resource) 143,927,000 tons, 0.018 opt Au, 0.72 opt Ag (measured and indicated sulfide resource) 95,510,000 tons, 0.011 opt Au, 0.33 opt Ag (inferred oxide resource) 148,804,000 tons, 0.017 opt Au, 0.85 opt Ag (inferred sulfide resource)			
Lone Tree (Buffalo Mountain district)	1990: 5.4 million tons oxide mill ore, 0.159 opt Au, 5.7 million tons heap-leach ore, 0.025 opt Au and 1.2 million oz Au in sulfide ore 1994: 4 million oz Au 2000: 40.8 million tons, 0.060 opt Au proven and probable reserves (Lone Tree Complex) 2001: 29.2 million tons, 0.065 opt Au proven and probable reserves; 7.9 million tons, 0.032 opt Au mineralized material 2002: 21 million tons, 0.069 opt Au proven and probable reserves; 2 million tons, 0.057 opt Au measured and indicated mineralized material; 1 million tons, 0.047 opt Au inferred mineralized material 2003: 3,300,000 tons, 0.092 opt Au proven reserves; 13,000,000 tons, 0.084 opt Au probable reserves; 2,100,000 tons, 0.054 opt Au indicated material; 600,000 tons, 0.054 opt Au inferred material 2004: 14,000,000 tons, 0.063 opt Au proven And probable reserves; 3,400,000 tons, 0.044 opt Au indicated material; 200,000 tons, 0.116 opt Au inferred material 2005: 4 million tons, 0.080 opt Au (proven and probable reserves); 3 million tons, 0.032 opt Au (measured and indicated resource); 2007: 4.200 million tons, 0.022 opt Au (measured and indicated resource)	1991-99: 546,335 oz Au 1995: 240,000 oz Au, 11,000 oz Ag 1996-97: 536,820 oz Au 1998: 257,702 oz Au, 27,484 oz Ag 1999: 191,975 oz Au, 35,617 oz Ag 2000: 281,022 oz Au, 38,346 oz Ag 2001: 260,518 oz Au, 29,974 oz Ag 2002: 327,160 oz Au, 65,905 oz Ag 2003: 434,704 oz Au, 80,094 oz Ag 2004: 497,065 oz Au, 140,144 oz Ag 2005: 339,187 oz Au, 46,934 oz Ag 2006: 357,787 oz Au, 26,601 oz Ag 2007: 182,768 oz Au, 37,172 oz Ag 2008: 16,775 oz Au 1,897 oz Ag 2009: 12,011 oz Au 2,309 oz Ag	Havallah Formation, Antler sequence, and dacite porphyry	38 Ma
Marigold (Battle Mountain district)	1987: 8 million tons, 0.0935 opt Au 1990: 4.3 million tons, 0.105 opt Au mill ore, 7.6 million tons, 0.026 opt Au heap-leach ore 1999: 19.09 million tons, 0.032 opt Au 2000: 30.2 million tons, 0.035 opt Au proven and probable reserves; 20.7 million tons, 0.029 opt Au measured and indicated resource 2001: 75.5 million tons, 0.027 opt Au proven and probable reserves; 109.9 million tons, 0.014 opt Au measured and indicated resource 2002: 79.1 million tons, 0.026 opt Au proven and probable reserves; 129.7 million tons, 0.014 opt Au mineral resource 2003: 9,366,000 tons, 0.031 opt Au proven reserves; 83,909,000 tons, 0.023 opt Au probable reserves; 19,937,000 tons, 0.020 opt Au measured reserves; 20,069,000 tons, 0.020 opt Au indicated resource; 177,450,000 tons, 0.014 opt Au inferred resource 2004: 71,218,500 tons, 0.023 opt Au proven and probable reserves; 18,043,500 tons, 0.022 opt Au measured and indicated resource; 21,000,000 tons, 0.014 opt Au inferred resource	1989-93: 322,219 oz Au, 9,784 oz Ag 1994-98: 363,771 oz Au 1999: 74,000 oz Au 2000: 68,000 oz Au 2001: 84,784 oz Au, 401 oz Ag 2002: 83,321 oz Au, 1,281 oz Ag 2003: 142,100 oz Au, 2,080 oz Ag 2004: 141,304 oz Au, 2,354 oz Ag 2005: 205,663 oz Au, 1,723 oz Ag 2006: 149,805 oz Au, 1,986 oz Ag 2007: 140,840 oz Au, 2,233 oz Ag 2008: 144,106 oz Au, 5,037 oz Ag 2009: 146,842 oz Au, 4,239 oz Ag	Paleozoic chert, argillite, and carbonate rocks	

MAJOR PRECIOUS-METAL DEPOSITS, HUMBOLDT COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
	2005: 98.21 million tons, 0.021 opt Au (proven and probable reserves); 157.48 million tons, 0.020 opt Au (measured and indicated resource, includes reserves); 163.23 million tons, 0.013 opt Au (inferred resource) 2006: 102.87 million tons, 0.021 opt Au (proven and probable reserves); 94.587 million tons, 0.018 opt Au (measured and indicated resource); 88.212 million tons, 0.011 opt Au (inferred resource) 2007: 84.66 million tons, 0.020 opt Au (proven and probable reserves); 46.41 million tons, 0.020 opt Au (measured and indicated resource); 122.53 million tons, 0.013 opt Au (inferred resource) 2008: 69.6 million tons, 0.020 opt Au (proven and probable reserves); 42.66 million tons, 0.016 opt Au (measured and indicated resource); 44.81 million tons, 0.013 opt Au (inferred resource) 2009: 150 million tons, 0.016 opt Au (proven and probable reserves) 42.19 million tons, 0.015 opt Au (indicated resource); 75 million tons, 0.015 opt Au (inferred resource)			
North Stonehouse (Buffalo Mountain district)	1991: 2.5 million tons, 0.103 oz Au mill ore		Havallah Formation and porphyry dikes	39 Ma
Pinson (Potosi district)	1980: 3.245 million tons, 0.119 opt Au 1989: 480,000 oz Au 1996: 2.6 million tons, 0.072 opt Au 2005: 1,692,000 tons, 0.421 opt Au (measured and indicated resource) 3,097,000 tons, 0.34 opt Au (inferred resource) 2006: (includes Range Front, Ogee and CX-West zones) 2,505,000 tons, 0.454 opt Au (measured and indicated resource) 3,374,500 tons, 0.340 opt Au (inferred resource)	1980: 56,000 oz Au 1986-88: 189,864 oz Au 1989: 72,489 oz Au (includes Preble) 1990-91: 112,022 oz Au 1992-94: 145,210 oz Au, 12,700 oz Ag 1995: 44,854 oz Au 1996-98: 128,935 oz Au, 7,990 oz Ag 1999: 11,975 oz Au, 442 oz Ag 2000: 1,116 oz Au, 31 oz Ag 2001: 679 oz Au	Comus Formation	Eocene?
Preble (Potosi district)	1985: 1.8 million tons, 0.062 opt Au 1986: 3.16 million tons, 0.093 opt Au heap leach, 80,000 tons, 0.242 opt Au mill grade 1989: 15,110 oz Au	1985: 17,000 oz Au 1987: 28,000 oz Au 1988: 18,828 oz Au 1989: included with Pinson 1990: 1,161 oz Au	Preble Formation	Eocene?
Rabbit Creek (Potosi district)	1989: 4.1 million oz Au (additional geologic resource of1 million Au in refractory material) 1992: reserves-3.26 million oz Au 1993: *see* Twin Creeks	1990-92: 296,000 oz Au 1993: *see* Twin Creeks	Ordovician	Eocene?
Sandman (Tenmile district)	2007: 8.033 million tons, 0.034 opt Au (measured and indicated resource) 1,418,000 million tons, 0.027 opt Au (inferred resource)			
Sleeper (Awakening district)	1985: 4.2 million tons, 0.13 opt Au, 0.73 opt Ag 1989: 1,975,000 oz Au 1990: 44.1 million tons, 0.038 opt Au, 0.152 opt Ag 1999: 2.1 million oz Au at average grade of 0.025 opt Au; 18.1 million oz Ag at average grade of 0.208 opt Ag 2008: 29,718,000 tons, 0.025 opt Au (indicated resource) 22,046,000 tons, 0.017 opt Au	1986: 128,000 oz Au, 94,000 oz Ag 1987-88: 389,106 oz Au 1989-96: 1,149,054 oz Au, 1,838,791 oz Ag 2001: 90 oz Au, 197 oz Ag 2002: 130 oz Au, 263 oz Ag	Miocene “latite” flows and dikes, silicic ash-flow tuff, Triassic slate and phyllite	16.1 Ma
Trenton Canyon (includes Valmy and North Peak) (Buffalo Valley district)	1994 oxide resource: 14.6 million tons, 0.035 opt Au, (517,000 oz Au) 1999: 995,000 tons, 0.021 opt Au (North Peak); 10.8 million tons, 0.022 opt Au (Valmy)	2000: included with Lone Tree 2001: 24,228 oz Au, 2,996 oz Ag 2002: 3,685 oz Au, 742 oz Ag 2006: 1,937 oz Au, 38 oz Ag 2007: 1,768 oz Au, 360 oz Ag		

MAJOR PRECIOUS-METAL DEPOSITS, HUMBOLDT COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Trout Creek (Battle Mountain district)	1989: 50,000 oz Au			
Twin Creeks (Chimney and Rabbit Creeks) (Potosi district)	1993: 5.7 million oz Au 1999: 87.1 million tons, 0.079 opt Au proven and probable 2000: 75.2 million tons, 0.086 opt Au proven and probable 2002: 47.6 million tons, 0.081 opt Au proven and probable reserves; 55 million tons, 0.057 opt Au measured and indicated mineralized material; 1.8 million tons, 0.046 opt Au inferred mineralized material 2003: 14,000,000 tons, 0.085 opt Au proven reserves; 48,200,000 tons, 0.074 opt Au probable reserves; 8,000,000 tons, 0.051 opt Au measured material; 34,800,000 tons, 0.051 opt Au indicated material; 1,700,000 tons, 0.041 opt Au inferred material; 2004: 61,800,000 tons, 0.075 opt Au proven and probable reserves; 15,300,000 tons, 0.077 opt Au indicated material; 800,000 tons, 0.043 opt Au inferred material 2005: 61.2 million tons, 0.074 opt Au (proven and probable reserves); 19.9 million tons, 0.049 opt Au (measured and indicated resource); 3.1 million tons, 0.033 opt Au (inferred resource) 2006: 64.8 million tons, 0.077 opt Au (proven and probable reserves); 25.0 million tons, 0.058 opt Au (measured and indicated resource); 3.1 million tons, 0.033 opt Au (inferred resource) 2007: 52.1 million tons, 0.078 opt Au (proven and probable reserves); 21.0 million tons, 0.063 opt Au (measured and indicated resource); 2.6 million tons, 0.030 opt Au (inferred resource) 2008: 51.7 million tons, 0.077 opt Au (proven and probable reserves); 31.1 million tons, 0.051 opt Au (measured and indicated resource); 10.8 million tons, 0.018 opt Au (inferred resource) 2009: 50.2 million tons, 0.077 opt Au (proven and probable reserves); 35.0 million tons, 0.050 opt Au (measured and indicated resource); 11.3 million tons, 0.018 opt Au (inferred resource)	1993-98: 3,338,026 oz Au, 1,317,456 oz Ag 1999: 879,453 oz Au, 119,191 oz Ag 2000: 779,075 oz Au, 103,909 oz Ag 2001: 831,962 oz Au, 95,721 oz Ag 2002: 786,313 oz Au, 158,401 oz Ag 2003: 697,607 oz Au, 128,535 oz Ag 2004: 352,810 oz Au, 99,472 oz Ag 2005: 267,620 oz Au, 144,172 oz Ag 2006: 354,484 oz Au, 43,467 oz Ag 2007: 488,457 oz Au, 99,344 oz Ag 2008: 512,190 oz Au, 57,913 oz Ag 2009: 437,830 oz Au, 84,159 oz Ag	Paleozoic	41-43 Ma
Winnemucca Mountain (Winnemucca district)	1998: 130,000 to 140,000 oz Au proven, 300,000 oz Au indicated			

LANDER COUNTY

Austin Gold Venture (Birch Creek district)	1986: 1.75 million tons, 0.16 opt Au 1989: mined out 1999: 154,000 oz Au resource	1986-88: 141,000 oz Au 1989: 50,000 oz Au	Antelope Valley Limestone	Cretaceous or Tertiary
Battle Mountain complex (Battle Mountain district)	1992: 500,000 oz Au 1995: resource (overall Battle Mountain complex)-60.2 million tons, 0.036 opt Au, including reserves-46.6 million tons, 0.040 opt Au 1999 (Phoenix): 5,680,000 oz Au proven and probable; 1.5 million oz Au additional mineralization 2000: 175.2 million tons, 0.034 opt Au proven and probable reserves	1994-98: 274,741 oz Au, 632,739 oz Ag 1999: 8,322 oz Au, 19,526 oz Ag 2000: 1,509 oz Au, 1,756 oz Ag 2001: *see* Phoenix		Eocene
Buffalo Valley gold project (Buffalo Valley district)	1988: 1.5 million tons, 0.05 opt Au 1994: 4.8 million tons, 0.07 opt Au 1997: 600,106 oz Au resource; 100,797 oz Au, other mineralized material 2010: 630,000 oz Au ("potential economic mineralization") (~ 30 million tons grading ~0.02 opt gold	1988-90: 39,668 oz Au		Eocene?

MAJOR PRECIOUS-METAL DEPOSITS, LANDER COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Cortez Joint Venture (Bullion district) CJV includes original Cortez Mine, Pipeline, South Pipeline, Gold Acres (2007 and on includes Cortez Hills)	1968: 3.6 million tons, 0.279 opt Au (Cortez deposit) 1987: 4.8 million tons, 0.105 opt Au 1999: 189.4 million tons, 0.050 opt Au proven and probable; 119.1 million tons, 2000: 151.3 million tons, 0.047 opt Au proven and probable; 60.0 million tons, 0.047 opt Au mineralized material 2001: 191.1 million tons, 0.044 opt Au proven and probable; 76.6 million tons, 0.040 opt Au resource 2002: 229.3 million tons, 0.034 opt Au proven and probable reserves; 281.7 million tons, 0.025 opt Au measured and indicated mineral resource 2003: 88,131,000 tons, 0.061 opt Au proven reserves; 49,623,000 tons, 0.045 opt Au probable reserves; 44,617,000 tons, 0.046 opt Au measured resource; 130,580,000 tons, 0.027 opt Au indicated resource; 18,023,000 tons, 0.047 opt Au inferred resource 2004: 193,560,000 tons, 0.046 opt Au proven and probable reserves; 188,860,000 tons, 0.028 opt Au measured and indicated; 20,500,000 tons, 0.024 opt Au inferred resource 2005 (Sept 1): 275.8 million tons, 0.040 opt Au (proven and probable reserves); 309 million tons, 0.033 opt Au (measured and indicated resource); 39.2 million tons, 0.058 opt Au (inferred resource) 2006: 184.0 million tons, 0.061 opt Au (proven and probable reserves); 44.47 million tons, 0.041 opt Au (measured and indicated resource); 6.54 million tons, 0.131 opt Au (inferred resource) 2007: 144.09 million tons, 0.080 opt Au (proven and probable reserves); 76.24 million tons, 0.045 opt Au (measured and indicated resource); 19.34 million tons, 0.153 opt Au (inferred resource) 2008: 222,125,000 tons, 0.060 opt Au (proven and probable reserves); 81,088,000 million tons, 0.046 opt Au (measured and indicated resource); 29,912,000 million tons, 0.129 opt Au (inferred resource) 2009: 243,669,000 tons, 0.058 opt Au (proven and probable reserves); 46,622,000 million tons, 0.074 opt Au (measured and indicated resource); 30,128,000 million tons, 0.144 opt Au (inferred resource)	1942-84: 2.4 million tons, 0.13 opt Au; 2 million tons, 0.041 opt Au leached. Little Gold Acres: 0.124 opt Au 1988: 42,322 oz Au (includes Horse Canyon) 1989: 39,993 oz Au, 12,234 oz Ag (includes Horse Canyon) 1990-91: 107,445 oz Au, 16,750 oz Ag 1992-93: 141,850 oz Au 1995-98: 1,817,273 oz Au, 31,332 oz Ag 1999: 1,328,525 oz Au 2000: 1,009,992 oz Au 2001: 1,184,732 oz Au 2002: 1,081,677 oz Au 2003: 1,065,402 oz Au 2004: 1,051,197 oz Au 2005: 915,889 oz Au, 52,160 oz Ag 2006: 408,255 oz Au, 25,065 oz Ag 2007: 534,173 oz Au, 47,240 oz Ag 2008: 464,253 oz Au (6,804 oz Au from Cortez Hills), 69,278 oz Ag 2009: 517,512 oz Au, 74,080 oz Ag	Roberts Mountains Formation, Wenban Limestone, Valmy Formation, quartz porphyry dikes	
Cortez Hills	2005 (Sept 1): 71.3 million tons, 0.079 opt Au, 5,545,000 oz Au (proven and probable reserves); 5.75 million tons, 0.42 opt Au, 2,421,667 oz Au (measured and indicated resource, underground); 13.8 million tons, 0.13 opt Au, 1,856,667 oz Au (inferred resource, open pit and underground) 2006: 8.5 million oz Au (proven and probable reserves) 2008 (Nov.): 15,620,000 tons, 0.127 opt Au, 1,983,740 oz Au (proven reserve) 128,150,000 tons, 0.074 opt Au, 9,483,000 oz Au (probable reserve)			
Crescent Pit	1994: 1.97 million tons mill grade, 0.125 opt Au, 2.2 million tons heap-leach, 0.029 opt Au 1997: included in Cortez Joint Venture			
Crescent Valley (Bullion district)	1994: placer reserves-8 million cu yd, 0.031 oz Au/cu yd 1995: placer resource-6 million cu yd, 0.03 oz Au/cu yd			
Dean (Lewis district)	1995: proven reserves-11,000 oz Au possible to probable resource-240,000 oz Au			

MAJOR PRECIOUS-METAL DEPOSITS, LANDER COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Elder Creek project/Shoshone (Lewis district)	1989: 91,500 oz Au 1990: 1.5 million tons, 0.041 opt Au	1990-91: 20,102 oz Au	Valmy Formation	Cretaceous or Eocene
Fire Creek (northeast of Bullion district)	1982: 350,000 tons, 0.06 opt Au 2005 (May): 1,779,196 tons, 0.328 opt Au (indicated resource) 2006: 1,961,195 tons, 0.576 opt Au (indicated resource) 2008 (April): 2,654,650 tons, 0.479 opt Au (indicated resource, 0.233 opt Au cut-off grade) 1,184,202 tons, 0.396 opt Au (inferred resource, 0.233 opt Au cut-off grade)	1983-84: 767 oz Au	basaltic andesite	Miocene
Fortitude complex (Battle Mountain district)	1984: 16 million tons, 0.15 opt Au, 0.57 opt Ag	1986: 253,000 oz Au, 902,000 oz Ag 1987: 255,000 oz Au 1988-93: 985,616 oz Au, 1,707,992 oz Ag (includes Surprise) 1994: 50,000 oz Au, 95,000 Ag (Reona Mine) 1995: *see* Battle Mountain Complex 2001: *see* Phoenix	Battle Formation, Antler Peak Limestone Pumpernickel Formation	37 Ma
Fortitude Extension (Battle Mountain district)	1992: 500,000 oz Au 1993: *geologic resource*-900,000 oz Au 1996: included in Battle Mountain Complex			
Independence Battle Mountain district)	2010: 14,802,000 tons, 0.014 opt Au, 0.27 opt Ag (measured and indicated oxide resource) 5,997,000 tons, 0.011 opt Au, 0.066 opt Ag (inferred oxide resource) 4,182,000 tons, 0.19 opt Au (inferred sulfide resource, 0.25 opt Au cut-off grade, skarn mineralization)			
Fortitude Extension (Battle Mountain district)	1992: 500,000 oz Au 1993: *geologic resource*-900,000 oz Au 1996: included in Battle Mountain Complex			
Hilltop (Hilltop district)	1984: 10.3 million tons, 0.073 opt Au 1989: 10 million tons, 0.049 opt Au 2005: 121 million tons, 0.019 opt Au (measured and indicated resource)		Valmy Formation	Oligocene?
Klondike property	1989: 100,000 oz Au equivalent			
McCoy/Cove (McCoy district)	1981: 2.5 million tons, 0.08 opt Au, 1 opt Ag (McCoy) 1987: 14 million tons, 0.05 opt Au (McCoy); 4 million oz Au, 250 million oz Ag (Cove) 1989: proven and probable reserves 2.9 million oz Au, 128 million oz Ag *geologic resource*-3.5 million oz Au, 1.50 million oz Ag 1999: 11.8 million tons, 0.043 opt Au, 2.387 opt Ag proven and probable reserves; 100,000 tons, 0.350 opt Au, 2.0 opt Ag other mineralization 2000: 4.7 million tons, 0.034 opt Au, 2.309 opt Ag proven and probable reserves 2001: 430,000 tons, 0.031 opt Au, 2.624 opt Ag proven and probable reserves 2010 (Helen Zone): 684,855 tons, 0.77 opt Au	1986: 50,000 oz Au 1987-98: 3,046,660 oz Au, 85.79 million oz Ag 1999: 124,500 oz Au, 8.43 million oz Ag 2000: 162,784 oz Au, 12,328,297 oz Ag 2001: 94,633 oz Au 6,451,425 oz Ag 2002: 33,142 oz Au, 1,987,421 oz Ag 2003: 4,699 oz Au, 706 oz Ag 2004: 8,454 oz Au, 64,335 oz Ag 2005: 2,740 oz Au, 776 oz Ag 2006: 2,939 oz Au, 596 oz Ag	Panther Canyon Formation (conglomerate, sandstone), Augusta Mountain Formation (limestone), granodiorite	39.5 Ma
Mud Springs (Bald Mtn. Zone) (Bullion district)	1993: *geologic resource*-42,000 oz Au			

MAJOR PRECIOUS-METAL DEPOSITS, LANDER COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Mule Canyon (Argenta district)	1992: 8.5 million tons, 0.136 opt Au 1996: 9 million tons, 0.112 opt Au	1996: 6,743 oz Au 1999: 55,392 oz Au, 10,022 oz Ag 2000: 40,027 oz Au, 5,856 oz Ag 2001: 33,616 oz Au, 3,100 oz Ag 2002: 13,444 oz Au, 2,708 oz Ag 2003: 8,086 oz Au, 1,490 oz Ag 2004: 2,289 oz Au, 645 oz Ag 2005: 47,896 oz Au, 5,449 oz Ag 2006: 30,732 oz Au, 3,248 oz Ag 2007: 22,466 oz Au, 4,565 oz Ag	basalt and basaltic andesite	15-16 Ma
Phoenix (Battle Mountain district)	2001: 174.2 million tons, 0.034 opt Au proven and probable reserves; 156.3 million tons, 0.17% Cu proven and probable reserves; 73.8 million tons, 0.026 opt Au mineralized material; 99.6 million tons, 0.14% Cu mineralized material 2002: 174.2 million tons, 0.034 opt Au probable reserves; 156.3 million tons, 0.16 % Cu probable reserves; 1.5 million tons, 0.033 opt Au measured and indicated mineralized material; 72.3 million tons, 0.026 opt Au inferred mineralized material; 63.5 million tons, 0.14 % Cu inferred mineralized material 2003: 175,700,000 tons, 0.035 opt Au probable reserves; 94,700,000 tons, 0.022 opt Au indicated material; 18,900,000 tons, 0.029 opt Au inferred material; 85,200 tons, 0.12% Cu indicated material; 14,300 tons, 0.11% Cu inferred material 2004: 248,000,000 tons, 0.034 opt Au proven and probable reserves; 33,900,000 tons, 0.022 opt Au indicated material; 34,900,000 tons, 0.028 opt Au inferred material; 216,700,000 tons, 0.15% Cu probable; 32,000,000 tons, 0.21% Cu indicated; 29,800,000 tons, 0.17% Cu inferred 2005: 308.4 million tons, 0.029 opt Au (proven and probable reserves); 22.2 million tons, 0.023 opt Au (measured and indicated resource); 16.5 million tons, 0.026 opt Au (inferred resource) 2006: 295.2 million tons, 0.027 opt Au (proven and probable reserves); 92.8 million tons, 0.017 opt Au (measured and indicated resource) 23.2 million tons, 0.022 opt Au (inferred resource) 2007: 278.1 million tons, 0.027 opt Au (proven and probable reserves); 92.8 million tons, 0.017 opt Au (measured and indicated resource); 22.9 million tons, 0.022 opt Au (inferred resource) 2008: 299.8 million tons, 0.021 opt Au (proven and probable reserves); 61.6 million tons, 0.015 opt Au (indicated resource); 34.0 million tons, 0.019 opt Au (inferred resource) 2009: 285.0 million tons, 0.020 opt Au (probable reserves); 158.4 million tons, 0.013 opt Au (indicated resource); 35.4 million tons, 0.015 opt Au (inferred resource)	2001: 5,641 oz Au, 6,468 oz Ag 2002: 6,134 oz Au, 1,236 oz Ag 2003: 5,444 oz Au, 1,003 oz Ag 2004: 7,887 oz Au, 2,224 oz Ag 2005: 6,406 oz Au, 1,156 oz Ag 2006: 67,394 oz Au, 38,112 oz Ag, 6,235,096 lbs Cu 2007: 181,313 oz Au, 664,787 oz Ag, 10,808,206 lbs Cu 2008: 175,259 oz Au, 1,040,563 oz Ag 15,853,706 lbs Cu 2009: 218,732 oz Au 1,212,153 oz Ag 23,733,389 lbs Cu		Eocene
Pipeline (Bullion district)	1991: *geologic resource*-11.3 million tons, 0.237 opt Au 1996: 136.7 million tons, 8.7 million oz Au measured resource, includes South Pipeline 1997: included in Cortez Joint Venture	included in Cortez Joint Venture	Roberts Mountains Formation	Eocene?

MAJOR PRECIOUS-METAL DEPOSITS, LANDER COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Robertson (Bullion district)	1988: 11 million tons, 0.04 opt Au 1999: Porphyry zone, 254,678 oz Au proven and probable reserves; Lucky Boy, 33,000 oz Au measured; Altenburg Hill, 21,300 oz Au measured; Widows Mine, 37,300 oz Au inferred; Gold Pan, 91,400 oz Au measured 2005-2006: 22.9 million tons, 0.031 opt Au (measured and indicated resource) 9,408,000 tons, 0.046 opt Au (inferred resource) 2007: 91.3 million tons, 0.025 opt Au (inferred resource) 2009: 178,924,188 million tons, 0.0189 opt Au (inferred resource, used higher gold price than in 2007)	1989: 3,700 oz Au	Valmy Formation	early Oligocene
Slaven Canyon property (Bateman Canyon district)	1994: 50,000 oz Au 2002: 1.6 million tons, 0.043 opt Au			
South Pipeline (Bullion district)	1992: 9 million tons, 0.082 opt Au 1994: *geologic resource*-76.5 million tons, 0.048 opt Au 1996: *see* Pipeline 1997: included in Cortez Joint Venture		Roberts Mountains Formation	Eocene?
Surprise (Battle Mountain district)	1987: 225,000 oz Au 1988-91: production and reserves included in Fortitude figures 1994: mined out	1987: 2,000 oz Au	skarn	37 Ma
Toiyabe	1988: 813,400 tons, 0.066 opt Au 2009: 4,975,000 tons, 0.035 opt Au (indicated resource)	1988: 32,000 oz Au, 10,300 oz Ag 1990-91: 20,480 oz Au, 15,125 oz Ag	lower Paleozoic calcareous siltstone	Eocene?
Victorine (Kingston district)	1992: 915,000 tons, 0.304 opt Au 1995: proven and probable reserves-256,000 tons, 0.36 opt Au, plus *additional geologic resource*-31,160 oz Au 2000: 120,000 oz Au proven and probable reserves; 200,000 oz Au possible reserves		Cambrian to Ordovician Broad Canyon sequence	
LINCOLN COUNTY				
Atlanta gold property (Atlanta district)	1980: 1.1 million tons, 0.08 opt Au, 1.6 opt Ag 1996: 300,000 oz Au, 3 million oz Ag	1980: 88,000 oz Au, 1,710,000 oz Ag	Pogonip Group, Ely Springs and Laketown Dolomites, Oligocene silicic tuff, dacite dikes	early Miocene
Caliente property (Pennsylvania district)	1997: *geologic reserves*-50,000 tons, 0.03 opt Au, 0.80 opt Ag; *geologic*		Tertiary diorite Tertiary andesite	
Easter and Delamar Project (Delamar district)	1994: *geologic resource*-3.36 million tons, 0.069 opt Au 1995: 1.5 million tons, 0.069 opt Au		Cambrian quartzite	Miocene
LYON COUNTY				
Fire Angel (Como district)	1989: 5,600 oz Au, *geologic resource*–148,500 oz Au			
Hydra-Hercules (Como district)	1997: 259,329 oz Au, 1,956,511 oz Ag		Tertiary andesite	

MAJOR PRECIOUS-METAL DEPOSITS, LYON COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Pine Grove (Pine Grove district)	1994: 2.5 million tons, 0.061 opt Au 2008 (0.010 opt cut-off grade) 2,738,000 tons, 0.25 opt Au (inferred resource, Wilson deposit) 3,321,000 tons, 0.075 opt Au) (inferred resource, Wheeler deposit)			
South Comstock Joint Venture (Silver City district)	1994: 3 million tons, 0.05 opt Au 1995: 100,000 oz Au			
Talapoosa (Talapoosa district)	1988: 2.5 million tons, 0.041 opt Au, 0.53 opt Ag oxide 14.9 million tons, 0.03 opt Au, 0.49 opt Ag sulfide 1995: *geologic resource*-45 million tons, 0.025 opt Au and 0.33 opt Ag, including proven and probable reserves of 29.9 million tons, 0.026 opt Au and 0.4 opt Ag		Kate Peak Formation	Miocene
MINERAL COUNTY				
Aurora Mine (Aurora district)	1989: 347,000 tons, 0.253 opt Au 1996: 900,000 tons, 0.1 opt Au 2003: *see* Esmeralda	1989-90: 25,656 oz Au, 34,562 oz Ag 1991: 15,000 oz Au 1992-93: 23,600 oz Au, 52,200 oz Ag 1995: 15,000 oz Au, 35,000 oz Ag 1996: 10,374 oz Au 1997-98: 15,414 oz Au, 7,287 oz Ag	andesite, rhyolite	10 Ma
Aurora partnership (Aurora district)	1983: 1.5 million tons, 0.129 opt Au, 0.3 opt Ag 1995: 230,000 tons, 0.208 opt Au (in portion of Humboldt vein system) 2003: *see* Esmeralda	1930s: 100,000 oz Au 1983: 10,000 oz Au 1988: 10,302 oz Au 1989: 27,825 oz Au, 26,000 oz Ag 1991-96: 157,796 oz Au, 318,933 oz Ag	andesite, rhyolite	10 Ma
Borealis (Borealis district)	1981: 2.1 million tons, 0.08 opt Au, 0.5 opt Ag 1988: 1.792 million tons, 0.046 oz Au/ton 2000: 33.4 million tons, 0.044 opt Au, 0.22 opt Ag cumulative resource 2005 (May): 44.7 million tons, 0.03 opt Au (measured and indicated resource) 34.8 million tons, 0.02 opt Au (inferred resource) 2006: 8.235 million tons, 0.022 opt Au, 0.158 opt Ag (measured and indicated resource, oxide) 35.157 million tons, 0.032 opt Au, 0.164 opt Ag (measured and indicated resource, oxide, partially oxidized, sulfides) 16.909 million tons, 0.028 opt Au, 0.106 opt Ag (inferred resource, oxide, partially oxidized, and sulfides) 2008: 29,560,000 tons, 0.045 opt Au, 0.273 opt Ag (measured and indicated resource, combined sulfide, partially oxidized and oxide) 36,161,000 tons, 0.027 opt Au, 0.196 opt Ag (inferred resource, combined sulfide, partially oxidizedand oxide) 8,546,000, 0.028 opt Au, 0.222 opt Ag (measured and indicated resource, oxide and partially oxidized, 13,706,000 tons, 0.018 opt Au, 0.096 opt Ag (inferred resource, oxide and partially oxidized, 2009: 16,650,000 tons, 0.023 opt Au, 0.19 opt Ag (measured and indicated resource, oxide, partially oxidized)	1981-84: 170,000 oz Au 1986-88: 116,256 oz Au 1989-90: 107,495 oz Au 52,401 oz Ag	rhyolite flow dome, andesite flows, breccias, volcaniclastic rocks	5 Ma

MAJOR PRECIOUS-METAL DEPOSITS, MINERAL COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Candelaria Mine (Candelaria district)	1982: 18.5 million tons, 1.09 opt Ag, 0.009 opt Au 1988: 24 million tons, 1.267 opt Ag, 0.011 opt Au 1999: 27.3 million tons, 3.4 opt Ag unmined resource; additional 8 million oz Ag in low-grade stockpile 2000: 48,000 oz Au and 45.4 million oz Ag indicated reserves	1982: 1.7 million oz Ag, 9,000 oz Au 1987: total production was 10 million oz Ag as of June 1987 1988-98: 30.67 million oz Ag, 95,218 oz Au 1999: 96,896 oz Ag, 237 oz Au	Candelaria Formation serpentinite, granitic dikes	Cretaceous
Denton-Rawhide (Rawhide district)	1986: 24.1 million tons 0.045 opt Au, 0.47 opt Ag 1989: reserves-29.4 million tons, 0.040 oz Au and 0.368 opt Ag; *geologic resource*-59.3 million tons, 0.0274 opt Au, 0.298 opt Ag 1997: 447,000 oz Au, 3.9 million oz Ag	1990-98: 916,800 oz Au, 7,438,000 oz Ag 1999: 115,900 oz Au, 665,000 oz Ag 2000: 104,349 oz Au, 817,787 oz Ag 2001: 100,747 oz Au, 727,095 oz Ag 2002: 82,584 oz Au, 695,248 oz Ag 2003: 63,283 oz Au, 525,809 oz Ag 2004: 43,390 oz Au, 446,000 oz Ag 2005: 33,820 oz Au, 311,760 oz Ag 2006: 26,334 oz Au, 235,870 oz Ag 2007: 19,597 oz Au, 160,964 oz Ag 2008: 17,731 oz Au, 150,493 oz Ag 2009: 19,370 oz Au, 209,528 oz Ag	rhyolite plugs, flows, tuffs, breccias	16 Ma
Esmeralda (Aurora district)	2003: 30,710,500 tons, 0.031 opt Au bulk-minable measured and indicated resource 9,206,300 tons, 0.025 opt Au bulk-minable inferred resource 192,152 tons, 0.50 opt Au underground-minable resource	2009: 5,212 oz Au, 24,980 oz Ag (no new mining)	andesite rhyolite	10 Ma
Mina Gold (Bell district)	1997: 1.77 million tons, 0.055 opt Au *geologic resource*	1997: exploration	Tertiary feldspar porphyry	
Mindora (Garfield district)	1988: 1.0 million tons, 0.037 opt Au and 1.78 opt Ag	1988: exploration		
Santa Fe (Santa Fe district)	1984: 8 million tons, 0.032 opt Au, 0.26 opt Ag 1990: 6.8 million tons, 0.035 opt Au and 0.241 opt Ag	1989-95: 345,499 oz Au, 710,629 oz Ag	Luning Formation	Miocene

NYE COUNTY

Baxter Springs (Manhattan district)	1988: 1 million tons, 0.050 opt Au 1990: *geologic resource*-5 million tons 0.050 opt Au			
Bruner property, Duluth zone (Bruner district)	1992: *geologic resource*-15 million tons, 0.026 opt Au	1993: exploration	Tertiary volcanic rocks	Miocene
Bullfrog (Bullfrog district)	1989: 18.6 million tons, 0.097 opt Au 1996: 10.2 million tons, 0.062 opt Au proven and probable reserves; 3.7 million tons, 0.040 opt Au mineralized material	1989-98: 2,237,484 oz Au, 2,935,484 oz Ag 1999: 76,159 oz Au, 90,967 oz Ag	rhyolitic ash-flow tuff	9.5 Ma
Cimmaron (San Antone district)	2004: 1,730,600 tons, 0.035 opt Au inferred material			
Corcoran Canyon (Barcelona district)	2004: 1,774,700 tons, 0.025 opt Au, 5.11 opt Ag indicated and inferred material		rhyolitic ash-flow tuff	
Daisy (Bare Mountain district)	1993: 4.7 million tons, 0.024 opt Au *geologic resource*-430,000 oz Au 1998: 4.2 million tons, 0.033 opt Au proven and probable reserves	1997-98: 64,504 oz Au 1999: 30,660 oz Au 2000: 8,740 oz Au 2001: 347 oz Au	Cambrian Bonanza King, Nopah, and Carrara Formations	11-13 Ma(?)

MAJOR PRECIOUS-METAL DEPOSITS, NYE COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Gold Bar (Bullfrog district)	1987: 1.23 million tons Au ore 1993: idle		silicic volcanic rocks	Miocene
Golden Arrow (Golden Arrow district)	1997: 12.4 million tons, 0.039 opt Au resource 2009: 12,172,000 tons, 0.024 opt Au, 0.33 opt Ag (measured and indicated resource, oxide+sulfide) 3,790,000 tons, 0.013 opt Au, 0.33 opt Ag (inferred resource, oxide+sulfide) 6,736,000 tons, 0.019 opt Au, 0.23 opt Ag (measured and indicated resource, oxide) 2,040,000 tons, 0.009 opt Au, 0.25 opt Ag (inferred resource, oxide)		Tertiary rhyolite tuff	
Gold Hill property (Round Mt. district)	1998: 306,620 oz Au, 4,871,890 oz Ag potential resource 2003: (included in Round Mt.)		rhyolite ash-flow tuff	26 Ma(?)
Gold Wedge property (Manhattan district)	2002: 104,706 oz Au, 0.494 opt Au measured resource; 47,052 oz Au, 0.583 opt Au indicated resource; 394,626 oz Au, 0.494 opt Au inferred resource 2005: 333,000 tons, 0.310 opt Au (measured and indicated resource)	2008: 406 oz dore		
Longstreet property (Longstreet district)	1989: 4 million tons, 0.024 opt Au, *geologic resource*-9.6 million tons, 0.024 opt Au		rhyolitic volcanic rocks	Oligocene
Manhattan property (Manhattan district)	1989: *geologic resource*-100,000 tons, 0.50 opt Au 1997: 1.7 million tons, 0.13 opt Au proven and probable		Cambrian Gold Hill Formation	
Midway (Rye Patch district)	1997: 270,000 oz Au preliminary resource 2005: 5,526,000 tons, 0.039 opt Au (inferred resource)		Ordovician Palmetto Formation Tertiary volcanic rocks	
Montgomery Shoshone (Bullfrog district)	1988: 3.1 million tons, 0.072 opt Au, 0.240 opt Ag		rhyolitic ash-flow tuff	9.5 Ma
Nevada Mercury (Bare Mountain district)	1994: *geologic resource*-50,000 oz Au			
North Bullfrog (Bullfrog district)	2008 :2,226,600 tons, 0.026 opt Au (indicated resource) 1,047,200 tons, 0.023 opt Au (inferred resource)			
Northumberland (Northumberland district)	1988: 12 million tons, 0.06 opt Au 2005 (July): 30,910,000 tons, 0.067 opt Au (measured and indicated resource) 4,381,000 tons, 0.091 opt Au (inferred resource) 2008 (June): 36.518 million tons, 0.06 opt Au (measured and indicated resource); 7.418 million tons, 0.10 opt Au (inferred resource)	1939-42: 32,700 oz Au 1981-84: 950,000 tons/year 1988: 29,667 oz Au, 130,394 oz Ag 1981-1990: ~230,000 oz Au, 485,000 oz Ag	Roberts Mountains and Hanson Creek Formations, granodiorite, tonalite, quartz porphyry dikes	
Paradise Peak/ Ketchup Flats pit (Fairplay district)	1984: 10 million tons, 0.1 opt Au, 3 opt Ag 1989: 5.22 million tons, 0.09 opt Au, 3.62 opt Ag, mill ore; 11.52 million tons, 0.036 opt Au, 0.445 opt Ag, leachable 1996: 5 million tons, 0.022 opt Au, 0.2 opt Ag (Ketchup Flats)	1986-88: 560,000 oz Au, 8.5 million oz Ag 1989-94: 1,054,084 oz Au, 15.6 million oz Ag	rhyolite and andesite flows, ash-flow and air-fall tuffs	Miocene

MAJOR PRECIOUS-METAL DEPOSITS, NYE COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Reward property (Bare Mountain district)	1998: 77,500 oz Au 2007: 5,181,340 tons, 0.0266 opt Au (proven and probable reserves); 6,423,571 tons, 0.0245 opt Au (measured and indicated resource) 2010: 11,003,000 tons, 0.024 opt Au (proven and probable reserves) 2,819,000 tons, 0.018 opt Au (inferred resource)		Cambrian Wood Canyon Formation	
Round Mountain (Smoky Valley) (Round Mountain district)	1977: 12 million tons, 0.061 opt Au, 0.07 opt Ag 1989: *geologic resource*-271 million tons, 0.032 opt Au 1999: 320 million tons, 0.018 opt Au proven and probable reserves; 126 million tons, 0.016 opt Au mineralized material 2000: 273.2 million tons, 0.019 opt Au proven and probable reserves; 18.7 million tons, 0.022 opt Au mineralized material 2002: 192.1 million tons, 0.020 opt Au proven and probable reserves; 54.6 million tons, 0.012 opt Au mineral resource 2003: 129,866,000 tons, 0.017 opt Au proven reserves; 49,838,000 tons, 0.020 opt Au probable reserves; 21,000,000 tons, 0.013 opt Au measured resource; 54,440,000 tons, 0.018 opt Au indicated resource; 19,580,000 tons, 0.018 opt Au inferred resource (includes Gold Hill) 2004: 433,400,000 tons, 0.018 opt Au proven and probable reserves; 64,000,000 tons, 0.015 opt Au mineral resource 2005: 275,608,000 tons, 0.017 opt Au (proven and probable reserves); 35,412,000 tons, 0.017 opt Au (measured and indicated resource); 35,374,000 tons, 0.013 opt Au (inferred resource) 2006: 226,084,000 tons, 0.017 opt Au (proven and probable reserves); 26,134,000 tons, 0.019 opt Au (measured and indicated resource); 32,898,000 tons, 0.013 opt Au (inferred resource) 2007: 141,736,000 tons, 0.018 opt Au (proven and probable reserves); 30,632,000 tons, 0.022 opt Au (measured and indicated resource); no released inferred resource 2008: 185,162,000 tons, 0.018 opt Au (proven and probable reserves); 57,140,000 tons, 0.019 opt Au (measured and indicated resource); 12,982,000 tons, 0.012 opt Au (inferred resource) 2009: 157,614,000 tons, 0.019 opt Au (proven and probable reserves); 87,824,000 tons, 0.021 opt Au (measured and indicated resource); 57,208,000 tons, 0.017 opt Au (inferred resource)	1977-84: 313,480 oz Au, 160,419 oz Ag 1987-88: 424,300 oz Au 1989: 386,227 oz Au, 211,297 oz Ag 1990: 483,192 oz Au, 236,600 oz Ag (includes Manhattan) 1991-98: 3,248,946 oz Au, 2,607,892 oz Ag 1999: 541,808 oz Au, 464,415 oz Ag 2000: 640,133 oz Au, 424,530 oz Ag 2001: 746,949 oz Au, 509,121 oz Ag 2002: 755,493 oz Au, 627,579 oz Ag 2003: 784,587 oz Au, 761,333 oz Ag 2004: 762,966 oz Au, 773,950 oz Ag 2005: 736,886 oz Au, 636,361 oz Ag 2006: 657,911 oz Au, 644,017 oz Ag 2007: 587,445 oz Au, 955,681 oz Ag 2008: 477,499 oz Au 931,368 oz Ag 2009: 414,941 oz Au, 850,878 oz Ag	rhyolite ash-flow tuff	26 Ma
Sterling (Bare Mountain district)	1983: 200,000 tons, 0.20 opt Au 1989: 469,000 tons, 0.21 opt Au 1996: 129,000 tons, 0.245 opt Au 2006: 214,554 tons, 0.216 opt Au	1983-88: 75,900 oz Au 1990-91: 24,841 oz Au 1995-98: 36,811 oz Au 1999: 3,093 oz Au	Wood Canyon and Bonanza King Formations	14 Ma
South Monitor (west of Ellendale district)	1996: 250,000 oz Au 1997: 14 million tons, 0.026 opt Au, 0.12 opt Ag		Tertiary volcanic rock	
Sullivan (Fairplay district)	1987: 10.2 million tons, 0.039 opt Au, 0.086 opt Ag and 0.37% Cu 1995: proven and possible-17 million tons of 0.34% Cu, 0.0255 opt Au, + 8.5 million tons of 0.32% Cu		Mesozoic granodiorite and metavolcanic rocks	Mesozoic
PERSHING COUNTY				
Bunce (Velvet district)	1989: *geologic reserves*-600,000 tons, 0.04 opt Au 1990: 500,000 tons, 0.04 opt Au		rhyolite	Miocene?

MAJOR PRECIOUS-METAL DEPOSITS, PERSHING COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Colado Gold (Willard district)	1997: 15 million tons, 0.022 opt Au resource 2007 (May 2008): 22,707,000 tons, 0.012 opt Au (oxide, measured and indicated resource); 594,000 tons, 0.070 opt Au (sulfide, measured and indicated resource); 79,129,000 tons, 0.015 opt Au (inferred resource)		Triassic-Jurassic metasedimentary rocks	
Florida Canyon (Imlay district)	1987: 22 million tons, 0.023 opt Au 1988: 37 million tons, 0.023 opt Au 1997: reserves-45.5 million tons, 0.024 opt Au proven and probable mineralized material, 122.8 million tons, 0.022 opt Au 2002: 20 million tons, 0.017 opt Au proven and probable reserves 2003: 374,393 oz Au proven and probable reserves 2004: 16,792,000 tons, 0.016 opt Au proven and probable reserves	1987-88: 109,300 oz Au 1989-98: 1,146,148 oz Au, 610,326 oz Ag 1999: 139,590 oz Au, 111,232 oz Ag 2000: 173,623 oz Au, 129,361 oz Ag 2001: 121,206 oz Au, 98,645 oz Ag 2002: 121,516 oz Au, 72,567 oz Ag 2003: 101,811 oz Au, 60,065 oz Ag 2004: 73,082 oz Au, 60,405 oz Ag (includes Standard) 2005 (Florida Canyon): 29,186 oz Au, 7,571 oz Ag 2005 (Standard): 21,522 oz Au, 51,751 oz Ag 2006 (Florida Canyon): 16,061 oz Au, 12,423 oz Ag 2006 (Standard): 46,070 oz Au, 64,497 oz Ag 2007 (Florida Canyon): 31,916 oz Au, 28,152 oz Ag 2007 (Standard): 11,814 oz Au, 24,735 oz Ag 2008 (Florida Canyon): 47,095 oz Au, 40,745 oz Ag 2008 (Standard): 2,625 oz Au, 3,644 oz Ag 2009 (Florida Canyon): 44,814 oz Au, 39,760 oz Ag 2009 (Standard): 1,510 oz Au, 3,270 oz Ag	Grass Valley Formation	2 Ma
Goldbanks project (Goldbanks district)	1994: 900,000 oz Au 1996: 80.8 million tons, 0.019 opt Au proven and probable reserves; 7.4 million tons, 0.014 opt Au possible reserves; 106.8 million tons, 0.028 opt Au drill indicated resource 2000: 569,000 oz Au and 1.7 million oz Ag indicated reserves 2006: 28,310,000 tons, 0.02 opt Au (inferred resource, Main and KW zones)			
Lincoln Hill (Rochester district)	2010: 17,215,000 tons, 0.02 opt Au, 0.5 opt Ag			
Relief Canyon (Antelope Springs district)	1983: 9 million tons, 0.032 opt Au 1988: ~ 1.3 million tons, 0.03 opt Au 1996: 8.6 million tons, 0.022 opt Au	1984: 24,500 oz Au 1987-88: 82,000 oz Au 1989-90: 34,266 oz Au, 39,235 oz Ag 2009: 92 oz Au, 342 oz Ag	Natchez Pass Limestone, Grass Valley Formation	Tertiary
Rochester (Rochester district)	1981: 75 million tons, 1.5 opt Ag 1989: *geologic resource*-94.5 million tons, 0.012 opt Au, 1.40 opt Ag 1997: 74.2 million oz Ag, 603,000 oz Au 2000: 50 million oz Ag, 410,000 oz Au (includes Nevada Packard) 2001: 51.4 million tons, 0.85 opt Ag, 0.007 opt Au proven and probable reserves; 61.8 million tons, 0.75 opt Ag, 0.005 opt Au mineralized material 2002: 46.9 million tons, 0.008 opt Au, 0.85 opt Ag proven and probable reserves; 33.8 million tons, 0.009 opt Au, 0.77 opt Ag mineralized material (includes Nevada Packard) 2003: 32.7 million tons, 0.01 opt Au, 0.91 opt Ag proven and probable reserves; 40.3 million tons, 0.01 opt Au, 0.77 opt Ag mineralized material 2004: 21,453,000 tons, 0.010 opt Au, 0.87 opt Ag proven reserves; 2,545,000 tons, 0.010 opt Au, 0.81 opt Ag probable reserves; 26,205,000 tons, 0.010 opt Au, 0.81 opt Ag measured resource; 8,551,000 tons, 0.010 opt Au, 0.96 opt Ag indicated resource; 308,000 tons, 0.003 opt Au, 1.73 opt Ag inferred resourcs	1986-98: 810,329 oz Au, 59.3 million oz Ag 1999: 70,396 oz Au, 6.2 million oz Ag 2000: 75,886 oz Au, 6,678,274 oz Ag 2001: 81,200 oz Au, 6,478,916 oz Ag 2002: 71,905 oz Au, 6,417,792 oz Ag 2003: 52,363 oz Au, 5,585,385 oz Ag 2004: 69,456 oz Au, 5,669,073 oz Ag 2005: 70,298 oz Au, 5,720,489 oz Ag 2006: 71,891 oz Au, 5,113,504 oz Ag 2007: 50,408 oz Au, 4,614,779 oz Ag 2008: 21,041 oz Au, 3,033,720 oz Ag 2009: 12,633 oz Au, 2,181,788 oz Ag	Koipato Group, Weaver Rhyolite, Rochester Rhyolite	Late Cretaceous

MAJOR PRECIOUS-METAL DEPOSITS, PERSHING COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
	2005: 10,168,000 tons, 0.011 opt Au, 0.86 opt Ag (probable reserves) 15,646,000 tons, 0.010 opt Au, 1.03 opt Ag (measured and indicated resource) 2006: 3,720,000 tons, 0.007 opt Au, 0.66 opt Ag (proven reserves) 15,235,000 tons, 0.010 opt Au, 0.94 opt Ag (measured and indicated resource) 2007: 32,664,000 tons, 0.010 opt Au, 0.86 opt Ag (measured and indicated resource) 2008: 114,058,000 tons, 0.005 opt Au, 0.54 opt Ag (measured and indicated resource)			
Rosebud project (Rosebud district)	1992: 570,000 oz Au (0.362 opt), 5.5 million oz Ag (5.5 opt) 1999: 216,000 tons, 0.323 opt Au	1997-98: 225,651 oz Au, 815,123 oz Ag 1999: 112,652 oz Au, 247,900 oz Ag 2000: 47,944 oz Au, 191,919 oz Ag	Tertiary volcanic rocks	Miocene
Spring Valley (Spring Valley district)	2005-2006: 10,030,000 tons, 0.024 opt Au (measured and indicated resource) 7,753,000 tons, 0.025 opt Au (inferred resource) 2007: 50,600,000 tons, 0.0196 opt Au (inferred resource) 2008: 87,750,000 tons, 0.021 opt Au (inferred resource)			
Standard (Imlay district)	2002: 17.2 million tons, 0.019 opt Au proven and probable reserves 2003: 404,100 oz Au proven and probable reserves 2004: 25,776,000 tons, 0.017 opt Au proven and probable reserves	1939-42, 1946-49: 45,743 oz Au, 127,451 oz Ag 2004: included with Florida Canyon	Natchez Pass Limestone, Grass Valley Formation argillite	
Tag-Wildcat (Farrel district)	1989: *geologic resource*-1.5 million tons, 0.043 opt Au; reserves-416,000 tons, 0.076 opt Au 2003: see Wildcat		Tertiary volcanic rocks	Miocene
Trinity (Trinity district)	1987: 1 million tons, 5.25 opt Ag Sulfide resource: ~4 million tons, 2.5 opt Ag	1987-89: ~5-6 million oz Ag	rhyolite porphyry, rhyolite tuff	26 Ma
Wildcat (Farrel district)	2003: 38.108 million tons, 0.018 opt Au indicated resource; 28.355 million tons, 0.015 opt Au inferred resource		Tertiary volcanic	Miocene
Willard (Willard district)	2007: 17,295,000 tons, 0.016 opt Au (oxide, measured and indicated resource) 448,000 tons, 0.070 opt Au (sulfide, measured and indicated resource) 20,849,000 tons, 0.015 opt Au (inferred resource)	~90,000 oz Au (late 1980s to early 1990s)	Jurassic-Triassic Grass Valley Formation	6 Ma
STOREY COUNTY				
Hartford Hill complex (includes Billie the Kid Mine) (Silver City district)		2004: 2,836 oz Au, 12,695 oz Ag 2005: 5,715 oz Au, 26,488 oz Ag 2006: 5,000 oz Au, 20,000 oz Ag (estimated)		
Comstock heap leach project (Comstock district)	1992: 475,000 tons, 0.072 opt Au, 0.60 opt Ag 1996: 100,000 oz Au, 1.2 million oz Ag			

MAJOR PRECIOUS-METAL DEPOSITS, STOREY COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Flowery (Golden Eagle) (Comstock district)	1989: 1 million tons, 0.037 opt Au 1993: 362,000 tons, 0.064 opt Au, 0.97 opt Ag, *geologic resource*-88,128 oz Au and 1 million oz Ag	1988: 836 oz Au, 9,473 oz Ag 1990: 6,000 oz Au, 70,000 oz Ag 1992-97: 16,949 oz Au, 195,701 oz Ag	Alta Formation	12 Ma
Oliver Hills (Comstock district)	1990: 3.37 million tons, 0.054 opt Au, 1.2 opt Ag 1993: 4 million tons, 0.05 opt Au, 0.5 opt Ag, *geologic resource*-225,000 oz Au and 2.25 million oz Ag	1991: 573 oz Au, 6,947 oz Ag		
WASHOE COUNTY				
Mountain View gold project (Deephole district)	1995: 19.5 million tons, 0.027 opt Au 1998: 10.7 million tons, 0.055 opt Au 2002: 23.219 million tons, 0.013 opt Au indicated resource; 4..466 million tons, 0.039 opt Au inferred resource		rhyolite	Miocene
Olinghouse (Olinghouse district)	1994: *geologic resource*-500,000 opt Au, 0.057 opt Au 1997: 512,800 oz Au proven and probable reserves, 0.042 opt Au	1998: 2,912 oz Au, 1,879 oz Ag 1999: 28,655 oz Au, 17,598 oz Ag	Miocene andesite	Miocene
Hog Ranch (Leadville district)	1984: 2.5 million tons, 0.085 opt Au 1988: 5.5 million tons, 0.064 opt Au proven and probable reserves; 20.1 million tons, 0.029 opt Au geologic resource 2003: 1,598,350 tons, 0.033 opt Au indicated; 440,924 tons, 0.054 opt Au inferred	1986-87: 80,000 oz Au 1988-95: 118,045 oz Au, 25,400 oz Ag	rhyolite, explosion breccia sinter	15-16 Ma
Wind Mountain (San Emidio)	1988: 15 million tons, 0.021 opt Au, 0.42 opt Ag 2007: 33,657,553 tons, 0.012 opt Au (measured and indicated resource) 9,758,547 tons, 0.009 opt Au (inferred resource)	1989: 30,900 oz Au, 335,000 oz Ag 1991: 91,000 oz Au, 405,000 oz Ag 1992: 54,690 oz Au, 297,403 oz Ag 1993: 19,570 oz Au, 92,630 oz Ag	Tertiary sedimentary rocks	late Tertiary or Quaternary
WHITE PINE COUNTY				
Alligator Ridge (Bald Mountain district)	1983: 5 million tons, 0.09 opt Au 1989: 1 million tons, 0.064 opt Au 1992: 11.5 million tons, 0.046 opt Au; *geologic resource*-661,888 oz Au, includes Casino/Winrock	1981-90: 632,057 oz Au, 84,188 oz Ag 1991-92: 27,450 oz Au 1993: included with Bald Mountain 1994: 40,000 oz Au 1995: idle 1996: included with Bald Mountain	Pilot Shale	Mesozoic or early Tertiary
Bald Mountain (Bald Mountain district)	1989: 6.7 million tons, 0.069 opt Au 1999: 32.6 million tons, 0.041 opt Au, proven and probable reserves; 31.7 million tons, 0.044 opt Au, mineralized material 2000: 509,000 oz Au proven and probable; 2.03 million oz Au measured and indicated resource 2002: 508,000 oz Au proven and probable reserves; 2.03 million oz Au measured mineral resource 2003: 10,143,000 tons, 0.033 opt Au proven reserves; 8,549,000 tons, 0.040 opt Au probable reserves; 10,371,000 tons, 0.027 opt Au measured resource; 10,836,000 tons, 0.043 opt Au indicated resource; 19,224,000 tons, 0.029 opt Au inferred resource	1986: 50,000 oz Au 1988-89: 103,731 oz Au 1990-93: 287,110 oz Au, 76,745 oz Ag 1994: 80,000 oz Au 1995-96: 221,908 oz Au, 62,460 oz Ag 1997-98: 243,500 oz Au, 63,416 oz Ag 1999: 105,475 oz Au, 18,058 oz Ag 2000: 134,469 oz Au, 14,400 oz Ag 2001: 108,392 oz Au, 18,321 oz Ag 2002: 172,328 oz Au, 21,547 oz Ag	quartz porphyry, Cambrian shale and limestone	Jurassic?

MAJOR PRECIOUS-METAL DEPOSITS, WHITE PINE COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
	2004: 21,530,000 tons, 0.044 opt Au proven and probable reserves; 53,586,000 tons, 0.027 opt Au measured and indicated resource; 10,808,000 tons, 0.018 opt Au inferred resource 2005 (includes Alligator Ridge): 105,050,700 tons, 0.032 opt Au (proven and probable reserves) 35,000,000 tons, 0.023 opt Au (measured and indicated resource) 14,868,000 tons, 0.026 opt Au (inferred resource) 2006 (includes Alligator Ridge): 109,922,000 tons, 0.031 opt Au (proven and probable reserves) 23,289,000 tons, 0.035 opt Au (measured and indicated resource) 17,290,000 tons, 0.023 opt Au (inferred resource) 2007 (includes Alligator Ridge): 128,093,000 tons, 0.024 opt Au (proven and probable reserves) 36,493,000 tons, 0.024 opt Au (measured and indicated resource) 24,648,000 tons, 0.017 opt Au (inferred resource) 2008 (includes Alligator Ridge): 157,675,000 tons, 0.018 opt Au (proven and probable reserves) 90,374,000 tons, 0.019 opt Au (measured and indicated resource) 71,004,000 tons, 0.021 opt Au (inferred resource) 2009 (includes Alligator Ridge): 227,346,000 tons, 0.020 opt Au (proven and probable reserves) 99,338,000 tons, 0.012 opt Au (measured and indicated resource) 40,184,000 tons, 0.012 opt Au (inferred resource)	2003: 90,602 oz Au, 26,810 oz Ag 2004: 46,685 oz Au, 27,635 oz Ag 2005: 77,767 oz Au, 32,652 oz Ag 2006: 277,615 oz Au, 32,121 oz Ag 2007: 125,998 oz Au, 21,702 oz Ag 2008: 103,610 oz Au,15,352 oz Ag 2009: 75,037 oz Au, 12,389 oz Ag		
Bellview (White Pine district)	1988: 277,000 tons, 0.04 opt Au, *geologic resource*-1 million tons, 0.036 opt Au			
Casino/Winrock (Bald Mountain district)	1989: **Casino**-804,000 tons, 0.054 opt Au; **Winrock** 1.3 millon tons, 0.037 opt Au 1990: **Winrock**-993,000 tons, 39,000 oz Au 1992: *see* Alligator Ridge	1990-92: 46,800 oz Au	late Paleozoic sedimentary rocks	Eocene
Easy Junior (Nighthawk Ridge) (White Pine district)	1989: 5.68 million tons, 0.031 opt Au 1991: 137,000 oz Au	1990: 11,500 oz Au, 900 oz Ag 1997: 510 oz Au, 76 oz Ag	Devonian and Mississippian rocks	Eocene
Golden Butte (Cherry Creek district)	1989: 4.23 million tons, 0.031 opt Au	1989-91: 43,519 oz Au, 16,911 oz Ag	Chainman Shale	Cretaceous or Eocene
Griffon Gold property (White Pine district)	1993: *geologic resource*-60,000 oz Au 1994: *geologic resource*-50,454 oz Au, 0.039 opt Au 1995: proven and probable reserves-2,737,000 tons, 0.025 opt Au 1997: 100,000 oz Au	1998: 37,921 oz Au, 269 oz Ag 1999: 24,740 oz Au	upper Joana Limestone	
Horseshoe (Bald Mountain district)	1991: 1.5 million tons, 0.039 opt Au		Pilot Shale and intrusive quartz porphyry	36-38 Ma
Illipah (Illipah district)	1987: 57,000 oz Au	1987: ~25,000 oz Au/year 1988: 25,324 oz Au, mining ended 1989: 3,874 oz Au, heap-leached	Paleozoic sedimentary rocks	Eocene?

MAJOR PRECIOUS-METAL DEPOSITS, WHITE PINE COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Limousine Butte (Butte Valley district)	1987: 57,000 oz Au 2009 (0.012 opt Au cut-off grade): 10,600,000 tons, 0.023 opt Au (measured and indicated resources) 2,500,000 tons, 0.020 opt Au (inferred resource)	1987: ~25,000 oz Au/year 1988: 25,324 oz Au, mining ended 1989: 3,874 oz Au, heap-leached	Paleozoic sedimentary rocks	Eocene?
Little Bald Mtn. (Bald Mountain district)	1986: 1 million tons, 0.10 opt Au 1989: 200,000 tons, 0.13 opt Au; *geologic resource*-260,000 tons, 0.127 opt Au 1993: 140,000 tons, 0.13 opt Au, *geologic resource*-21,800 oz Au	1985-88: 21,700 oz Au 1989: 5,500 oz Au, 1,500 oz Ag	Antelope Valley Formation	35-38 Ma
Mt. Hamilton (White Pine district)	1988: 7.7 million tons, 0.05 opt Au, 0.5 opt Ag 1994: reserve-9.04 million tons, 0.052 opt Au, 0.38 opt Ag 1996: 10.8 million tons, 0.038 opt Au, 0.24 opt Ag 1997: 7.72 million tons, 0.035 opt Au 2009: 12,617,000 tons, 0.031 opt Au, 0.144 opt Ag (measured and indicated resource) 1,491,000 tons, 0.012 opt Au, 0.122 opt Ag (inferred resource)	1995-97: 99,500 oz Au, 207,500 oz Ag	Dunderberg Shale	Cretaceous
Pan (White Pine district)	1989: 241,000 oz Au 1998: 10.86 million tons, 0.022 opt Au Drill-indicated and inferred 2003: 17,890,000 tons, 0.019 opt Au indicated resource; 7,986,000 tons, 0.016 opt Au inferred resource 2009 (0.006 opt au cut-off grade: 34,650,000 tons, 0.018 opt Au (measured and indicated resource) 1,600,000 tons, 0.017 opt Au (inferred resource)		Mississippian rocks	
Robinson (Robinson district)	1989: 46.0 million tons, 0.019 opt Au; *geologic resource*-1 million oz Au 1991: *geologic resource*-200 million tons 0.012 opt Au 1999: 194 million tons, 0.59% Cu, 0.007opt Au, proven and probable reserves 2003: 146.3 million tons, 0.687% Cu, 0.008 opt Au, proven and probable reserves 2005: 160,400,000 tons, 0.69% Cu,) 0.073 opt Au (proven and probable reserves) 610,979,000 tons, 0.55% Cu, 0.0064 opt Au (measured resource, 0.2% Cu cut-off) 171,858,000 tons, 0.44% Cu, 0.0041 opt Au (indicated resource, 0.2% Cu cut-off) 98,166,000 tons, 0.32% Cu, 0.0015 opt Au (inferred resource, 0.2% Cu cut-off) 2006: 122,401,000 tons, 0.69% Cu, 0.0076 opt Au (proven and probable reserves) 2007: 103,788,000 tons, 0.68% Cu, 0.0067 opt Au (proven and probable reserves) 2008: 121,693,000 tons, 0.54% Cu, 0.0067 opt Au (proven and probable reserves) 2009: 103,059,000 tons, 0.53% Cu, 0.0062 opt Au (proven and probable reserves)	1986: 48,000 oz Au, 96,000 oz Ag 1987-88: 88,957 oz Au 1989-90: 153,828 oz Au, 121,340 oz Ag 1991: 21,674 oz Au 1992: 35,581 oz Au, 55,000 oz Ag 1993: 13,432 oz Au 1996-98: 196,000 oz Au, 783,500 oz Ag, 370 million lbs Cu 1999: 26,250 oz Au, 153,104 oz Ag, 62 million lbs Cu 2004: 12,228 oz Au, 27 million lbs Cu 2005: 80,941 oz Au, 191,479 oz Ag, 126 million lbs Cu 2006: 75,074 oz Au, 156,839 oz Ag, 121,319,197 lbs Cu, 260,000 lbs Mo 2007: 108,118 oz Au, 179,238 oz Ag, 131,986,134 lbs Cu, 62,033 lbs Mo 2008: 137,628 oz Au, 183,903 oz Ag, 159,684,092 lbs Cu, 78,855 lbs Mo 2009: 99,000 oz Au, 200,819 oz Ag, 122,000,000 lbs Cu, 88,711 lbs Mo	Rib Hill Sandstone, Riepe Spring Limestone, intrusions	Cretaceous

MAJOR PRECIOUS-METAL DEPOSITS, WHITE PINE COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Taylor (Taylor district)	1980: 10 million tons, 3 opt Ag 1988: 5.92 million tons, 2.7 opt Ag (resource) 2007: 6,433,000 tons, 2.31 opt Ag (measured and indicated resource) 757,000 tons, 2.54 opt Ag (inferred resource)	1980: 1,200 tons/day	Guilmette and Joana Limestones, rhyolite dikes	Eocene or Oligocene
White Pine (White Pine district)	1989: 63,000 oz Au, 0.04 opt Au	1989: 20,654 oz Au	Pilot Shale	Oligocene?
Yankee (Bald Mountain district)	1992: 683,000 oz Au 1993: *see* Bald Mountain	1990: ~15,000 oz Au 1992: 10,800 oz Au	Pilot Shale	36-38 Ma?

Newmont Gold and Silver Production in the Carlin Trend

Production data for individual mines owned by Newmont Gold Co. in the Carlin trend are not available in many cases. Annual production of Newmont operations in the Carlin trend is as follows:

Year	Gold (oz)	Silver (oz)
1988	895,500	NA
1989	1,467,800	117,400
1990	1,676,000	NA
1991	1,575,700	NA
1992	1,588,000	98,000
1993	1,666,400	175,000
1994	1,554,000	158,000
1995	1,634,500	188,000
1996	1,700,000	322,000
1997	1,819,000	118,000
1998	1,575,391	150,400
1999	1,536,401	255,011
2000	1,865,648	108,111
2001	1,547,247	292,241
2002	1,378,782	277,753
2003	1,122,208	206,767
2004	1,287,674	363,052
2005	1,397,583	227,158
2006	1,310,258	169,212
2007	1,322,001	268,875
2008	1,320,019	149,254
2009	1,172,790	225,431

NA= not available

Other Metallic Deposits

by John L. Muntean

This is a compilation, in progress, of metallic deposits other than gold and silver. Initially, active projects with recently released reserves, resources, and production will be included. The information in this compilation was obtained from the Nevada Division of Minerals and from published reports, articles in mining newsletters, and company websites, annual reports, and press releases. Locations of active mines are shown on page 2, and contact information is listed in the Directory of Mining and Milling Operations.

Deposit name	Metals	Reserves/resources	Production
ELKO COUNTY			
Contact (Contact)	Cu	2009: 33,578,000 tons, 0.293% Cu (proven and probable reserve) 89,551,000 tons, 0.268% Cu (measured and indicated resource) 50,520,000 tons, 0.302% Cu (inferred resource)	
Indian Springs (Delano district)	W	2007: 10.8 million tons, 0.171% WO_3 (indicated resource); 8.2 million tons, 0.167% WO_3 (inferred resource)	
EUREKA COUNTY			
Mount Hope (Mount Hope district)	Mo	2007: 965,926,000 tons 0.068% Mo (proven and probable reserves); 109,641,000 tons, 0.030% Mo (measured and indicated resource); 191,308,000 tons, 0.063% Mo (inferred resource)	
HUMBOLDT COUNTY			
Ashdown (Vicksburg district)	Mo		2006: 10,500 lbs Mo 2007: 247,466 lbs Mo 2008: 202,597 lbs Mo 2009: 214,714 lbs Mo
Cordero (Opalite district)	Ga	2007: 10 million tons, 47.7 ppm Ga (measured and indicated resource); 6.6 million tons, 43.7 ppm Ga (inferred resource)	
Kings Valley (Disaster district)	U	2006: 2,978,000 tons, 0.081% U_3O_8 (inferred resource)	
LANDER COUNTY			
Phoenix (Battle Mountain district)	Cu	2007: 279,600,000 tons, 0.13% Cu (proven and probable reserves); 91,300,000 tons, 0.16% Cu (measured and indicated resource); 23,900,000 tons, 0.16% Cu (inferred resource) 2008: 302,000,000 tons, 0.15% Cu (proven and probable reserves); 91,700,000 tons, 0.20% Cu (measured and indicated resource); 95,953,000 tons, 0.23% Cu (inferred resource)	2006: 6,235,096 lbs Cu 2007: 10,808,206 lbs Cu 2008: 15,853,706 lbs Cu 2009: 23,733,389 lbs Cu

OTHER METALLIC DEPOSITS (continued)

Deposit name	Metals	Reserves/resources	Production
		2009: 287,500 tons, 0.16% Cu (proven and probable reserves); 199,687,000 tons, 0.18% Cu (measured and indicated resource); 91,815,000 tons, 0.23% Cu (inferred resource)	
LYON COUNTY			
MacArthur (Yerington district)	Cu	2008: 57,365,000 tons, 0.239% Cu, (measured and indicated resource, oxide and chalcocite material) 75,832,000 tons, 0.283% Cu, (inferred resource, oxide and chalcocite material)	
Pumpkin Hollow (Yerington district)	Cu, Fe,	2007: 342,735,000 tons, 0.579% Cu, 0.0019 opt Au, 0.0700 opt Ag, 15.67% Fe (measured and indicated resource) 438,164,000 tons, 0.446% Cu, 0.0015 opt Au, 0.0700 opt Ag, 10.23% Fe (inferred resource)	
	Cu	2009 (0.2% Cu cut-off grade): 488,228,000 tons, 0.58% Cu, 0.002 opt Au, 0.069 opt Ag (measured and indicated resource) 440,826,000 tons, 0.42% Cu, 0.001 opt Au, 0.048 opt Ag (inferred resource)	
	Fe	2009 (10% Fe cut-off grade) 306,420,000 tons, 30.04% Fe (measured and indicated resource) 440,138,000 tons, 20.67% Fe (inferred resource)	
NYE COUNTY			
Liberty (formerly known as Hall-Tonopah) (San Antone district)	Mo	2007 (April 2008): 432,951,000 tons 0.071% Mo, 0.07% Cu (proven and probable reserves); 109,336,000 tons, 0.052% Mo, 0.11% Cu (measured and indicated resource); 127,200,000 tons, 0.051% Mo, 0.08% Cu (inferred resource)	
PERSHING COUNTY			
Springer (Mill City district)	W	1983: 3.59 million tons, 0.446% WO_3 (historical General Electric resource)	
WHITE PINE COUNTY			
Robinson (Robinson district)	Cu, Mo	2006: 122,401,000 tons, 0.69% Cu (proven and probable reserves) 2007: 103,788,000 tons, 0.68% Cu (proven and probable reserves) 2008: 121,693,000 tons, 0.54% Cu (proven and probable reserves) 2009: 103,059,000 tons, 0.53% Cu (proven and probable reserves)	2006: 121,319,197 lbs Cu, 260,000 lbs Mo 2007: 131,986,134 lbs Cu, 62,033 lbs Mo 2008: 159,684,092 lbs Cu, 78,855 lbs Mo 2009: 122,000,000 lbs Cu, 88,711 lbs Mo (See Major Precious Metal Deposits also.)

Industrial Minerals

by David A. Davis

The total value of industrial minerals produced in Nevada in 2009 was estimated at $258 million, which was 45% lower than in 2008. In decreasing order of estimated value, the most important Nevada industrial minerals in 2009 were construction aggregate, barite, lime and limestone, diatomite, gypsum, silica, and clay, each valued at more than $10 million. Industrial mineral commodities with production values of less than $10 million were lithium, dolomite, magnesia, cement, iron ore, salt, perlite, opal, dimension stone, and turquoise. Zeolite was processed in Nevada but mined in California, and as such was not included in the estimate of total industrial mineral value reported above. Data used for these estimates, and data reported for individual commodities below, were obtained from the Nevada Division of Minerals, the Nevada Department of Taxation, the U.S. Bureau of Land Management, or directly from companies that produced the commodities. Data are given in short tons unless otherwise noted. U.S. Geological Survey data cited are from commodity reports on the agency's web site at http://minerals.usgs.gov/minerals/pubs/commodity.

Aggregate (Sand and Gravel, Crushed Stone)

According to the U.S. Geological Survey, the United States production of construction sand and gravel decreased 23% in 2009 to 882 million tons valued at $6.2 billion, and crushed stone decreased 20% to 1.29 billion tons valued at $11.3 billion. Except for several years of flat production, production of construction sand and gravel had increased 86% between 1991 and 2006. 2009 was the third straight year of decreased production, which has decreased 39% from the high of 1.46 billion tons in 2006. Production of crushed stone had increased steadily 18% between 2002 and 2006, but 2009 marked the third straight year of decreased production, down now 34% from the high of 1.96 billion tons in 2006. Apparent consumption of construction sand and gravel has declined 24% to 884 million tons, and apparent consumption of crushed stone has declined 22% to 1.2 billion. Both have declined 39% and 36% respectively from the 2006 highs of 1.46 billion tons of construction sand and gravel and 1.97 billion tons of crushed stone. The small difference between production and consumption was made up by imports mostly from Canada and Mexico. The nationwide average price of construction sand and gravel increased 3% to $6.99 per ton in 2009. It had increased

60% over the previous 10 years and been rising each year since at least 1970. The nationwide average price of crushed stone increased 4% to $8.76 per ton in 2009. It has increased 81% since 1999 after a decrease in the late 1990s.

According to the U.S. Geological Survey, in 2009, Nevada produced an estimated 19,600,000 tons of construction sand and gravel valued at $103,000,000 and 9,140,000 tons of crushed stone valued at $90,500,000. The production and value of construction sand and gravel (using revised 2008 figures of 32,200,000 tons valued at $161,000,000) decreased 39% and 36% respectively, and the production and value of crushed stone (using revised 2008 figures of 11,200,000 tons valued at $95,100,000) decreased 19% and 5% respectively. Production from sand and gravel deposits accounted for about 71% of aggregate production statewide, with crushed stone and lightweight aggregate making up the balance. The total production value of $193.5 million makes construction aggregate the third most valuable commodity produced in the state in 2009—well below the value of Nevada's gold production and about 40% of the value of second-ranked copper production, but nearly 1.7 times that of fourth-ranked silver.

About 20.4 million tons of construction aggregate are estimated to have been produced in the Las Vegas area in 2009, which was about 31% lower than in 2008. Sand and gravel operations accounted for about 65% of the aggregate used in the Las Vegas metropolitan area in 2009. As in past years, the Lone Mountain area in northwest Las Vegas remained the most important source of sand and gravel. The Lone Mountain area produced more than 10 million tons in 2005 and 2006, but annual production is estimated to have been below that from 2007 onward. Significant production also came from sand and gravel pits and stone quarries south and northeast of Las Vegas and in the Ivanpah Valley south-southwest of Las Vegas. Sand and gravel from portable crushers at construction sites were also important producers of base aggregate in Las Vegas.

Companies in the Las Vegas area that produced more than one million tons of aggregate in 2009 were Aggregate Industries and Las Vegas Paving Corp. Companies with production between 500,000 and one million tons per year were Impact Sand and Gravel, Nevada Ready Mix Corp., and Wells Cargo. Impact Sand and Gravel and Nevada Ready Mix Corp. each had produced over a million tons in 2008 but dropped below that in 2009. American Sand and Gravel produced more than 500,000 tons in

2008 but dropped below that in 2009. Diamond Construction, which produced almost one million tons in 2008, produced well below 100,000 tons in 2009 and then divested themselves of their pit. CEMEX, which produced over 500,000 tons in 2008, produced nothing in 2009.

Las Vegas Paving, a major producer of asphalt concrete, mostly produced sand and gravel from its Blue Diamond and Lone Mountain pits. The company also produced crushed stone from the Apex landfill about 10 miles northeast of Las Vegas. Nevada Ready Mix, a subsidiary of the Mitsubishi Corporation, mined most of its aggregate from a complex of pits in alluvium in the Lone Mountain area, with minor production coming from quarries in adjacent bedrock. Frehner Inc., a subsidiary of Aggregate Industries, mined and crushed limestone from its Sloan property a few miles south of Las Vegas. American Sand and Gravel and Hollywood Sand and Gravel mostly produced aggregate from community pits. The Southern Nevada Lightweight operation near Jean produced aggregate for lightweight concrete block and sand for use in stucco. According to the U.S. Bureau of Land Management (BLM) database LR2000, community pits and other aggregate mining facilities administered by the BLM and operated by a number of companies, including some of those already mentioned, contributed about 3.6 million tons to the total production of the Las Vegas and adjacent southern Nevada area in 2009, a drop of over 50% from 2008. CEMEX of Mexico closed their El Dorado pit near Railroad Pass and put it up for sale. Their subsidiary Rinker Materials produced crushed granite from it in 2008.

The Cind-R-Lite Block Company shipped lightweight aggregate to the Las Vegas market from their cinder operation near Amargosa Valley in Nye County. Most of the material shipped was 3/8-inch aggregate for the manufacture of cinder blocks and pavers. Cind-R-Lite has two manufacturing sites in the Las Vegas Valley and one in the Amargosa Valley.

In 2006, Service Rock Products Corporation of California submitted an application to the BLM to build and operate an aggregate pit called the Sloan Aggregate Mine in N/2, section 32, T23S, R61E. In 2007, CEMEX submitted an application to build and operate an aggregate pit called the Mohave Minerals Project in S/2, section 29, T23S, R61E. The mining from two pits, expected to eventually grow into one large 2,500-foot deep pit covering about 640 acres, is proposed to produce 100 million tons of mostly limestone and dolomite over a 20- to 30-year period. The sale request for the

material exceeds the volume limitations for noncompetitive sales and would have to be done on a competitive basis either through oral bid or auction. The sites would be auctioned as two separate parcels, and there is no guarantee that Service Rock and CEMEX would be the winning bidders. The public scoping meetings ended in January 2008, however, the filing of the proposed mining plan of operation to the BLM was delayed until February 2009. The applicants proposed removing the asphalt plant from the proposed action. Because of the delay, the draft environmental impact statement was tentatively scheduled to be completed in June 2010. Following a period of public comment, a final environmental impact statement is now anticipated for April 2011. Residents in several housing developments within five miles of the proposed pits are opposing the projects.

About 5 million tons of construction aggregate are estimated to have been produced in the Reno-Sparks-Carson City area in 2009, about 41% less than in 2008. Production from Granite Construction, which was over one million tons of aggregate in 2007 and fell below that in 2008, was still above 500,000 tons in 2009. Granite Construction operates several pits in the area, but the bulk of the company's production was crushed andesite and crushed granitic rock from its Lockwood pit. Except for shipping a small amount of stockpiled material, Granite Construction's Hidden Canyon pit was not in operation in 2009. Combined production from the two pits of Martin Marietta Materials, Inc., which was over 1 million tons in 2006 and fell below that in 2007, remained above 500,000 tons in 2009. Most of Martin Marietta's production comes from the Rocky Ridge Quarry north of Sparks, which produces crushed granitic rock and some decomposed granite. Combined production from A and K Earthmovers' two pits, which was more than one million tons in 2007 and fell below 500,000 tons in 2008, fell sharply to below 100,000 tons in 2009. Companies with area operations with annual production between 500,000 and 1,000,000 tons in 2007 that fell below that in either 2008 or 2009 are CEMEX, Rilite, Inc., and Western Nevada Materials. Western Nevada Materials produced sand and gravel from the Tracy Pit in 2009 and then sold the pit. CEMEX owns the former All-Lite Aggregate crushed rhyolite pit and also operates the sand and gravel operation at the Paiute pit, which is leased from the Pyramid Lake Paiute Tribe. Crushed rock accounted for about 70% of the aggregate used in 2009 in the Reno-Sparks-Carson City area. Lightweight aggregate, an important component of crushed rock production in the area, was produced by CEMEX, Rilite, and

Basalite. Cinderlite Trucking, Inc. produced a small amount of decorative rock and sand and cinder for deicing from their Black and Red Cinder pits northeast of Carson City.

Sierra Nevada Construction, Inc. produced aggregate from the Mustang Pit and then temporarily down shut the pit down in April 2009. Gopher Construction, Inc., temporarily shut down their Trico and Mull Pits in Storey and Lyon Counties respectively in 2009. Granite Construction temporarily shut down the Hidden Canyon Pit in Washoe County in 2008, but shipped some material from stockpiles in 2009.

About 2.4 million tons of aggregate were produced outside of the major metropolitan areas in Nevada in 2009. Together, operators in Churchill County produced almost 490,000 tons of aggregate in 2009. Nye County produced almost 430,000 tons, mostly in the Pahrump area. Humboldt produced over 376,000 tons. Douglas, Elko, and Storey Counties produced between 200,000 and 250,000 tons each, and Lander and Lyon Counties produced between 150,000 and 200,000 tons each. Esmeralda, Eureka, Lincoln, Mineral, Pershing, and White Pine Counties produced less than 100,000 tons of aggregate each in 2009.

The Federal Highway Administration and the Nevada Department of Transportation (NDOT) acting on their behalf proposed to expand their materials site located about four miles southeast of Wells in the Wood Hills in section 24, T37N, R62E from 100 acres to 140 acres. The present site, which was acquired in 1994 and expanded in 2004, provides riprap, borrow, base, and shoulder material for the construction and maintenance of Interstate 80 and U.S. Route 93 near Wells. The purpose of the expansion is to gain access to underlying bedrock carbonates for the production of riprap and base not found at other NDOT material sites. In 2009, the BLM completed an environmental assessment for the proposed expansion.

The Federal Highway Administration and NDOT acting on their behalf proposed to expand their materials site located along State Route 228 about three miles south of its intersection with State Route 227 at Spring Creek in section 18, T33N, R56E from 80 acres to 200 acres. The present site, which was acquired in 1950, has provided material for highway construction and maintenance projects mainly in the vicinity of Jiggs, Spring Creek, Lamoille, and Elko. The purpose of the expansion is to provide an estimated 1,066,000 cubic yards of base, borrow, and/or bituminous surface material for the construction and maintenance of State Routes 227 and 228, and Interstate 80 near

Spring Creek and Elko. In 2009, the BLM completed an environmental assessment for the proposed expansion.

The Nye County Road Department proposed to expand the Duckwater Gravel Pit located along Nye County Road 379 in section 17, T13N, R56E from 10 acres to 20 acres. Presently, the pit has a stock pile of 30,000 cubic yards of gravel. The expansion would allow the mining of up to 250,000 cubic yards over a 10-year period for the continued maintenance of county roads. In 2009, the BLM completed an environmental assessment for the proposed expansion.

In 2009, Las Vegas Paving Corporation dropped 17 placer mining claims they had staked in 2003. These were in section 33, T17S, R64E, and sections 4 and 5, T18S, R64E and were largely over the Pennsylvanian-Permian Callville Limestone.

Barite

According to the U.S. Geological Survey, the United States production of barite ($BaSO_4$) decreased 41% to an estimated 419,000 tons of barite valued at about $20 million in 2009, which is the lowest level since 1993. Most of this production comes from Nevada and the remainder comes from a mine in Georgia. Consumption decreased 33% to almost 2.1 million tons. Imported barite, mostly from China and some from India, decreased 39% to about 1.8 million tons. It was mostly imported into the Gulf Coast for use in oil and gas drilling offshore in the Gulf of Mexico and onshore drilling in the southeastern and southwestern U.S. The average price of barite in 2009 remained high and increased 9% to $47.17 per ton from the mine according to the U.S. Geological Survey.

According to Schlumberger, the average weekly U.S. oil and gas drill rig count decreased by about 42% to 1,174 during 2009, and the Canadian rig count decreased 38% to 200. The U.S. rig count continued the slide stared in 2008, falling 46% from 1,751 the first week of January to 943 in late May. The count then began a slow general rise from late May and increased 43% to 1,349 the last week of December. The rig count generally followed oil prices which fell from 2008 into early 2009, more or less stabilized for several months, and then increased unevenly through the rest of the year. The Canadian rig count jumped from 231 to 400 in the first half of January, decreased to 54 by May, and then rose slowly rose to 344 by the end of the year.

According to data from the Nevada Division of Minerals, Nevada's barite production, which comes from just three mining operations, decreased 20% to 476,451 tons from 595,129 tons shipped in 2008. Although this is still considerably more than the recent low production of 377,000 tons in 2002, it is far below the 2.48-million-ton high in 1981. The difference in reported production is that the U.S. Geological Survey reports run-of-mine, flotation, or other beneficiated material that is sold or used by the producer, while the Nevada Division of Minerals reports what is shipped, which can include some material from stockpiles. About 95% of the barite sold domestically is used as a weighting agent in oil and gas well drilling fluids. According to the U.S. Geological Survey, shipments of ground barite from Nevada mostly went to Colorado, Utah, and Wyoming gas drilling customers.

M-I SWACO, which is jointly owned by Smith International and Schlumberger, was the largest Nevada barite producer in 2009. Their production decreased 31% to 220,650 tons from 318,383 tons shipped in 2008 of crude and ground barite from the Greystone Mine and Battle Mountain plant, both in Lander County. Except for 204,332 tons shipped in 2002, this was the lowest production since 90,000 tons were shipped in 1994. A small amount of barite is also taken from old stockpiles in the nearby Mountain Springs Mine for blending at the plant. The barite of the Greystone Mine is in black chert and minor argillite and shale of the Middle to Late Devonian Slaven Chert.

Baroid Drilling Fluids, a subsidiary of Halliburton Co., was the second largest producer in Nevada. Their production decreased 8% to 171,331 tons from 186,138 tons shipped in 2008. The company mined barite from the Rossi Mine in Elko County and processed it at the Dunphy Mill in Eureka County. Heemskirk Canada, Ltd., a Canadian industrial minerals concern, used barite from the Dunphy Mill for their Lethbridge, Alberta, plant. The barite was then supplied to the western Canadian drilling mud market. The barite occurs in chert of the Ordovician Vinini Formation.

Baker Hughes INTEQ shipped 90,608 tons of barite from its Argenta operation near Battle Mountain in Lander County, decreased 7% to 84,470 tons shipped from about 90,608 tons shipped 2008. Baker Hughes proposed to expand their operations from a current disturbance area of 433 acres to 592 acres within the boundaries of their Plan of Operation. Currently, the open pits cover 83.6 acres. The proposed expansion would involve expanding their F Pit North 50.1 acres and their Cuna Pit 17.9 acres. The

barite deposits are in black chert and minor argillite and shale of the Middle to Late Devonian Slaven Chert in the upper plate of the Roberts Mountain thrust.

The Big Ledge Mine, of Spirit Minerals, LP, apparently did not produce in 2009. No annual production report was sent to the Nevada Division of Minerals, and the Nevada Department of Taxation reported no gross or net proceeds. Also, the Nevada Secretary of State's Business Entity Search website shows Spirit Minerals as having its corporate status revoked in 2009. In 2008, they had expected to mine about 250,000 tons of ore and produce 500 tons per day through their Dry Creek jig plant for a total of 50,000 tons. The mine was expected to have a three- to five-year life span, although it may hold more reserves. The barite occurs in argillite and chert of the Ordovician Valmy Formation.

Spirit Minerals has continued to keep its claims current and staked new ones in 2009. Sprit Minerals staked 42 lode claims adjacent to earlier claims in T12 and T13N, R46E in the Northumberland district in Nye County. These are in the area that includes the Monitor and Bluestone barite deposits described in NBMG Bulletin 98, *Barite in Nevada*. Spirit Minerals also staked 18 lode claims adjacent to earlier claims in T25N, R47E in the Carico Lake district in Lander County. These are in the area of the Bald Mountain barite deposit in the Devonian Slaven Chert described in NBMG Bulletin 98, *Barite in Nevada*.

Stardust Explorations, Inc., of Elko, Nevada, entered into an agreement to acquire the Snow White barite property (http://www.stardustexplorations.com). According to NBMG Bulletin 98, *Barite in Nevada*, the Snow White is located in the Sulphur Spring Range in section 2, T29N, R53E. A small open pit and old bulldozer trenching suggests pre-1978 production of less than 1,000 tons. The deposit consists of three areas of barite vein replacement of quartzite and pebbly quartzite in the Lower Mississippian Diamond Peak Formation. Two samples taken by the U.S. Bureau of Mines assayed 90% and 93% $BaSO_4$. According to the Nevada Secretary of State's Business Entity Search website, Stardust Explorations, Inc. is now listed as having had its corporate status revoked.

Cement

According to the U.S. Geological Survey, United States cement production declined 25% to about 64.9 million metric tons with a value of $6.5 billion in 2009, the

third straight year of decline. For the ten years up to 2005, production increased over 25%, but has declined 35% since then to the lowest level since 1982. Consumption declined 26% to about 71.5 million metric tons in 2009 with the difference between production and consumption being made up by imports mainly from China, Canada, South Korea, and Thailand. Consumption increased almost 17% between 2002 and 2005, but has declined 42% since then. The average mill price decreased 3% to $89.81 per ton in 2009. The price ranged between $68.04 and $72.12 per ton between 1998 and 2004 but then increased 23% by 2007 and dropped 4% since then. The drop in consumption is largely due to the severe decline in the housing market, which started in 2006, spread into the commercial and government sectors in 2008, and continued into 2009. Production was also affected by the closure or idling of 14 plants across the country with the opening of only two new plants and the temporary idling of a number of other plants.

Cement is produced by combining lime (CaO, normally derived from heating calcite, $CaCO_3$, the main mineral in limestone, to drive off CO_2), silica (SiO_2, derived from sandstone or other silica-rich rock), alumina (Al_2O_3, typically derived from shale or other clay- or alumina-rich rock), and iron oxide (Fe_2O_3, commonly from iron ore or from the rocks that also contain silica or alumina), and calcium sulfate (typically derived from gypsum, $CaSO_4 \cdot 2H_2O$). The first four ingredients are heated in a kiln, which produces a dry solid, termed *clinker*. After adding gypsum, grinding, adding water, and curing, these ingredients harden to make cement. Concrete is made when the wet cement is mixed with aggregate. The concern over carbon dioxide emissions continued to be a major environmental issue that was in part being addressed by the partial use of noncarbonated sources of calcium oxide and the partial substitution of supplementary cemetitious materials (see section on Pozzolan). The overall industry strategy is to reduce emissions per ton of cement product rather than by plant. In 2009, the acceptable emissions level was lowered for mercury and some other pollutants from cement plants. This was expected to make it difficult for plants to continue to use fly ash for the production of clinker.

The only cement producer in Nevada is the Nevada Cement Co. (a subsidiary of Eagle Materials, Inc., of Dallas, Texas), which has a plant in Fernley, Lyon County. Production is confidential, but the plant was built in 1964 with a rated annual clinker capacity of 505,000 tons, and produces Type I/II, low alkali, moderate sulfate-resistant

cement, and IP cement. The cement is manufactured from Tertiary lacustrine limestone mined a few miles south of Fernley, and from other raw materials that come from northern Nevada and elsewhere.

Most of the cement goes to the northern Nevada market with a little going to California. Both markets were particularly hard hit by the housing slowdown. Though production from the Fernley facility is confidential, Eagle Materials reported their overall cement volume was down 16%, and overall cement sales revenue was down 20% in 2009. Eagle Materials received permits from the state for its planned expansion of the Fernley facility, but the downturn in the economy has caused the company to put the expansion plans on hold through 2010. Once started, the project will take 18 to 24 months to complete.

Infrastructure Materials Corporation of Reno, Nevada, formerly Silver Reserve Corp., staked a large number of claims in 2009, and owns 12 projects for cement grade limestone in Nevada. The following are summarized from the BLM database LR2000, and the company website http://www.infrastructurematerialscorp.com.

Two of the projects are in Clark County. The M M Claim Group consists of 68 claims located about 15 miles south of Las Vegas, Nevada. About 10% of the samples taken during development work reportedly ran “an acceptable cement grade.” The Royale Claim Group consists of 21 claims located about 10 miles south of Las Vegas. Reconnaissance surface mapping and sampling has been completed with what were reported to be “good quality carbonates.” Both projects are in T23-24S, R59-60E, which are largely underlain by carbonates of the Mississippian through Permian Bird Spring Formation and later clastic rocks.

Three of the projects are in Elko County. The Morgan Hill Claim Group consists of 212 claims located mostly in T37N, R58E about 20 miles west of Wells, Nevada. The claim area covers large amounts of micritic limestone containing beds of varying amounts of MgO within the Devonian Devils Gate and Nevada Formations. The unit thickness may range up to 500 feet. The area also contains sandstone for a silica supply required for cement. The local topography is conducive to open pit mining with potentially little to no initial strip ratio. The Pequop Claim Group consists of 71 lode claims located mostly in T33-34N, R65E about 35 miles southeast of Wells and covers limestone beds interbedded with some chert and silicic limestone beds of the Pennsylvanian Ely Formation. A number of samples reportedly show the limestone to

be of “good cement grade,” and the silicic rocks may provide a source of silica. The Wood Hills Claim Group consists of 129 claims located in T37N, R62E about five miles southeast of Wells and covers limestone beds of the Devonian Devils Gate and the Pennsylvanian Ely Formations. Over 50 surface samples reportedly show “good cement grade limestone.”

Four of the projects are in Lincoln County. The Blue Nose Claim Group consists of 297 claims located in T8S, R68-69E along the south edge of the Clover Mountains about 25 miles southeast of Caliente, Nevada, and covers limestone of the Mississippian Monte Cristo Formation. The property was surface mapped, sampled, and drilled. About 60% of the samples reportedly contained “cement grade material,” and limestone from 27 of 29 drill holes reportedly assayed between 88% and 100% calcium carbonate. Areas of elevated magnesium were also reported but do not appear to affect the overall value of the cement grade zone. The Burnt Springs Claim Group consists of three separate blocks containing 51 claims located in parts of T2-4S, R65-66E in the Burnt Springs Range 6 to 10 miles northwest of Caliente. The claims, which have been mapped and sampled, cover thickly bedded limestone with minimal dolomitic overburden in the lower part of the Cambrian Highland Peak Formation. The Jumbled Mountain Claim Group consists of 186 claims located in T9-10S, R69-70E about 40 miles southeast of Caliente and covers three isolated outcroppings of Paleozoic limestone. These areas have been mapped and sampled. The Lime Mountain Claim Group consists of 139 claims located in T8S, R70E about 35 miles southeast of Caliente and covers a nearly 500-foot thick unit of light gray to white clean limestone containing only traces of chert in the Mississippian Monte Cristo Formation.

Three of the projects are in Pershing County. The Buffalo Mountain Claim Group consists of nine claims located in T27N, R34E about 20 miles northeast of Lovelock, Nevada, and covers limestone beds probably containing some interbedded dolomite in the Triassic Natchez Pass Formation. The Ragged Top Claim Group consists of 76 claims, some of which are in Churchill County, located in T25N, R28E about 23 miles southwest of Lovelock. These claims cover 14 outcrops of limestone in the Triassic to Jurassic Auld Lang Syne Group. The Rock Hill Claim Group consists of 12 claims located in T32N, R37E about 12 miles southeast of Mill City, Nevada, and covers two 300- to 400-foot thick units of interbedded limestone, siltstone, and sandstone probably in the Triassic Natchez Pass Formation.

Clay

According to data from the Nevada Division of Minerals, Nevada clay production was an estimated 22,000 tons in 2009, a decrease of 37% from 35,000 tons in 2008. This production does not include halloysite, ($Al_2Si_2O_5(OH)_4$), mined in Washoe County for Nevada Cement.

In 2009, IMV Nevada, owned by Mud Camp Mining Company, LLC, produced about 20,000 tons of combined sepiolite ($Mg_4Si_6O_{15}\cdot 6H_2O$), saponite ($(Ca_{0.5},Na)_{0.3}(Mg,Fe^{2+})_3(Si,Al)_4O_{10}(0H)_2\cdot 4H_2O$), and bentonite (a rock consisting mostly of montmorillonite, $(Na,Ca)_{0.3}(Al,Mg)_2Si_4O_{10}(OH)_2\cdot nH_2O$), from deposits in the Ash Meadows-Amargosa Flat area of Nye County. This is a decrease of 35% from about 30,900 tons produced in 2008. The clay occurs in shallow, flat-lying deposits in Pliocene lacustrine rocks. It is processed at a plant in Amargosa Valley, and clay products are exported worldwide. The sepiolite and saponite deposits have unusual geology; they are considered to have originated in a Pliocene playa with an area of at least 22 square miles. The sepiolite, which yields most of the profits for the operation, occurs in an almost continuous bed with an average thickness of about 7 feet. IMV Nevada is the only commercial producer of sepiolite and saponite in North America.

Two companies campaign-mine and ship relatively minor amounts of Nevada clay from several sites for use in high-value specialty products. At its White Caps Mill near Beatty in Nye County, Vanderbilt Minerals Co. processes small amounts of clay stockpiled from several deposits in Nevada, Arizona, and California. In 2009, the company did not actively mine but did ship smectite (a group of clay minerals including montmorillonite) from the New Discovery Mine just south of Beatty, the Blanco Mine about 40 miles west-southwest of Tonopah in the Coaldale mining district in Esmeralda County, and the Buff and Satin mines about 10 miles northeast of Lovelock in the Willard mining district in Pershing County.

The American Colloid Co. mined and shipped white bentonite from its Nassau property in Coal Canyon in the Willard mining district for use in specialty clay products. The clay is in altered rhyolite tuff-breccia of probable Miocene-Pliocene age. American Colloid also mines several thousand tons of hectorite, ($Na_{0.3}(Mg,Li)_3Si_4O_{10}(F,OH)_2$), every few years from their Disaster Peak Mine in the Disaster mining district about 30 miles west of McDermitt in Humboldt County. The hectorite is in moat deposits of the

McDermitt Caldera, which are discussed more in the section on lithium. The Disaster Peak Mine did not produce in 2009.

The Art Wilson Company mined halloysite on an as-needed basis for the Nevada Cement Co., which owns the pit in the Terraced Hills about 8 miles northwest of Pyramid Lake. Because of its high alumina content, it is used in the production of Portland cement at the Nevada Cement Co. plant at Fernley.

Senator Minerals, Inc., and Kent Exploration, Inc., both of Vancouver, Canada, through a joint venture, continued to hold the Ivanhoe Creek bentonite property in Elko County, but conducted no work on it through 2009. The property consists of lode and placer claims covering 140 acres in sections 17 through 20, T38N, R48E and sections 13 and 14, T38N, R47E in the Ivanhoe district about 12 miles southeast of Midas. Drilling in 2007 indicated a “near-surface” deposit containing about 2.2 million tons of “high-quality” bentonite. One bulk sample assayed at 93% calcium bentonite (http://www.senatorinc.com; http://www.kent-exploration.com).

Diatomite

The United States is the world’s largest producer of diatomite, a sedimentary rock composed of microscopic, siliceous fossils of diatoms, single-celled algae. According to the U.S. Geological Survey, the domestic production decreased 25% to an estimated 575,000 metric tons of diatomite in 2009 valued at $171 million. Production peaked at 799,000 metric tons in 2006, dropped 16% in 2007, then increased in 2008. Apparent consumption decreased 21% to 488,000 metric tons, but exports, which accounted for 15% of production, decreased 42% to 88,000 metric tons. Production was from seven companies with twelve mining areas and nine processing facilities in California, Nevada, Oregon, and Washington with California and Nevada accounting for most of it. The average price at the plant increased 14% to about $255 per metric ton in 2009. For the last 18 years, the average price has ranged between $200 and $255 per ton and averaged about $224 per ton. About two-thirds of the diatomite produced in Nevada is used in filtration, and the remainder is largely used in absorbents, fillers, and cement. Emerging small-scale uses include pharmaceutical processing and nontoxic insecticides.

EP Minerals, LLC, a subsidiary of Eagle Picher Corp., and the second largest diatomite producer in the world, produces most of Nevada’s diatomite. EP Minerals’

Colado operation in Pershing County is the company's most productive Nevada operation. It consists of a plant at Lovelock that mostly makes filtration products from diatomite mined about 15 miles to the northwest in the Velvet mining district. The diatomite occurs in thick beds interbedded with fresh-water tuffaceous sedimentary rocks of probable Miocene age. The company also produces diatomite used in fillers and absorbents at its Clark plant and mine in the Clark mining district in Storey County, about 20 miles east of Reno, and diatomite used in insulation from a pit near Hazen in Lyon County. The diatomite at Clark occurs with diatomaceous shale and thin beds of volcanic tuff within the Miocene-Pliocene Kate Formation and consists of about 90% of the diatom *Melosira granulata*.

The Celite Corp. operates a plant in Fernley that produces diatomite fillers and mined their Nightingale deposit north of Fireball Ridge in Churchill County in 2009. Their Hazen Pit, which had been mined since 1950 and still has reserves, was placed on standby and not mined in 2009. Celite is a subsidiary of World Minerals Inc., the world's largest diatomite producer and a subsidiary of Imerys, a large French industrial minerals company.

The Moltan Company ships absorbent products, cat litter, and soil conditioner under several labels from a mine and plant complex in Churchill County about 20 miles northeast of Fernley in the Desert mining district. Diatomite deposits in western Churchill County are interbedded with Pliocene lacustrine tuffaceous shale, sandstone, and limestone and siliceous tuff.

The Grefco Minerals, Inc., diatomite operation near the Esmeralda/Mineral County line is small relative to other Nevada diatomite companies but has been producing diatomite for many years for fillers. The deposit is in Miocene-Pliocene lacustrine sedimentary rocks consisting of diatomite, argillaceous and calcareous diatomite, clay, sand, and volcanic ash, and the main diatoms are *Melosira granulata*, *Stephanodiscus aslraea*, and *Eunotia robusta*. Since 2004, production has been from stockpiled ore.

In 2009, Global Silica, LLC, of Las Vegas, Nevada, staked 106 placer and two lode claims adjacent to 52 placer claims they staked in 2008. These claims are located in T4N, R37E in the Monte Cristo Range in northern Esmeralda County. The company plans to mine diatomite in section 26 and process and sell it as amorphous silica. The BLM is working on an environmental assessment, and production is tentatively

scheduled for 2011. According to USGS Miscellaneous Field Studies Map MF-2260, the diatomite is abundant in the Miocene “sedimentary rocks of McLeans”, which largely consists of siltstone, shale, and fine-grained clayey sandstone.

Dimension Stone and Landscape Rock

Mt. Moriah Stone Quarries, LLC, quarried flaggy quartzite of several colors from the Cambrian Prospect Mountain Quartzite at a quarry about 15 miles north of Baker in White Pine County. This material, which naturally splits into large slabs, is used for flagstone, ashlar (uncut facing stone), and other types of uncut building stone.

Las Vegas Rock produced flagstone, ashlar, boulders, and crushed landscape rock from its Rainbow Quarries near Goodsprings, about 32 miles southwest of Las Vegas at the base of Mount Potosi. The operation consists of a main quarry and a number of satellite quarries located according to the color of the stone. The stone is mined from the Jurassic Aztec Sandstone.

In 2009, D and H Mining leased their pits located about 5 miles north of Beatty to Kalamazoo Materials, Inc., of Tucson, Arizona. Kalamazoo Materials mined crushed stone for landscaping and sold it under the product names of Apache Gold and Apache Brown. In 2007, D and H Mining mined “spicerite” and crushed stone for landscaping from their pits, but due to the major drop in demand because of the recession, their pits were inactive in 2008. The company defines spicerite as a strong, bright white, hydrothermal altered tuff used to make bricks and blocks; it has been marketed in southern Nevada and southern California.

Gemstones

Precious opal is produced from several mines in the Virgin Valley area of northern Humboldt County. Virgin Valley is a well-known source of gemstones in North America. The best known mines there are the Royal Peacock, Rainbow Ridge, Bonanza, and Hidden Valley Mines. In 2009, the Bonanza, Rainbow Ridge and Royal Peacock Mines combined produced about 100 pounds from pay-to-dig operations. In addition, Nevada has also probably produced more than $30 million worth of turquoise, mostly during the first half of the twentieth century when as much as 10,000 pounds were produced in a single year. In 2009, less than 100 pounds of turquoise were

shipped from the Blue Ridge Mine, a family-owned property in the Bullion district of Lander County.

Gypsum

According to the U.S. Geological Survey, the United States crude gypsum production decreased 23% to an estimated 17.1 million metric tons valued at $79.9 million in 2009. Apparent consumption decreased 28% to 21.2 million metric tons, the third consecutive annual decrease and a decrease of over 50% since peaking at 41.6 million metric tons in 2006, largely due to the collapse of the housing construction market. The difference between production and consumption was mostly made up with imports, from Canada and some from Mexico, which decreased 42% to 4.2 million tons in 2009. In 2009, the price of crude gypsum decreased 2% to $8.50 per metric ton from the mine. For the previous ten years, the price has ranged between $6.26 and $8.70 and averaged $7.82 per metric ton. Sales of synthetic gypsum, produced largely through scrubbed emissions from coal-fired power plants, increased slightly to 7.7 million metric tons in 2009. It had increased 36% between 2001 and 2006 to 9.3 million metric tons but has decreased 17% since then. The construction of new large wallboard plants and the continued expansion of existing facilities that began in 2005 using synthetic gypsum will eventually result in less use of mined gypsum.

In 2009, Nevada moved up from fifth to first in the list of nine states which produce 79% of the country's total. According to data from the Nevada Division of Minerals, Nevada's gypsum production decreased 14% to an estimated 1.198 million tons, which is the sixth consecutive annual decline.

PABCO Gypsum in Clark County northeast of Las Vegas was the largest Nevada producer in 2009. Production fell 14% to about 715,700 tons in 2009 from about 829,800 tons of crude gypsum in 2008. This is the fourth annual decline and a drop of 58% since 2005, when production last peaked at 1.688 million tons. PABCO Gypsum processes the gypsum into wallboard at a plant adjacent to their mining operation. Processing yields about 70% by weight gypsum from the ore, which is in a nearly flat-lying late Miocene gypsite blanket atop a 5-square-mile mesa. Drilling indicates the gypsum is at least 120 feet thick in the area of current mining.

USG, the nation's largest wallboard producer, was the second largest Nevada producer in 2009. Production decreased 24% to 201,900 tons in 2009 from 266,300

tons in 2008. This is the third annual decline and a drop of 45% since 2006, when production last peaked at 369,500 tons. The company mines gypsum in western Pershing County and processes it into wallboard and plaster at a plant at Empire in Washoe County. The gypsum is of Triassic or Jurassic age and forms several masses in a 2-square-mile area. The largest mass, the Selenite orebody, contains 85 to 95% gypsum. In December 2010, USG announced that the mine and wallboard plant would close at the end of January 2011. Whether the operations restart depends on the demand for wallboard in the California and Nevada construction markets.

The Art Wilson Company of Carson City produced about 121,600 tons of gypsum and anhydrite from the Adams Mine in Lyon County, a 20% decrease from about 152,000 tons in 2008. The Adams deposit is a folded body associated with limestone in Triassic metavolcanic rocks. The Pioneer Gypsum Mining Company produced about 158,600 tons of gypsum from the Pioneer Mine about 10 miles east of Las Vegas, a 4% increase from 152,500 tons produced in 2008. Material from these two smaller operations is used in cement and agricultural applications. The Pioneer Mine exploits the same late Miocene gypsite deposit as the PABCO operation about 5 miles to the north.

Georgia-Pacific Gypsum, LLC, operates a plant at Apex using synthetic gypsum and crude gypsum imported from St. George, Utah, for the production of drywall, and related products. They also own the Weiser Ridge quarry about 10 miles west of Overton. Georgia-Pacific Gypsum, LLC, has not actively mined the quarry since 1995 but is planning to resume mining to provide crude gypsum for their Apex plant. The quarry is in gypsum interbedded with limestone of the Permian Toroweap and Kaibab Formations.

Iron Ore

In 2009, the Saga Exploration Company shipped iron ore from stockpiles at the old Nevada Barth Mine in Eureka County. The iron consists mostly of hematite and some magnetite, and is used in the manufacture of cement. The American Smelting and Refining Company leased the property from the Central Pacific Railroad Company and mined 544,295 tons of iron ore between 1903 and 1918 for use as flux in their lead smelter in Salt Lake City. Lessees continued to work the property off and on afterwards

with some mining in the 1960s and 1970s. Saga Exploration has shipped iron ore from stockpiles since 1993.

Lime, Limestone, and Dolomite

According to the U.S. Geological Survey, the United States production of quicklime (CaO) and hydrate ($Ca(OH)_2$) decreased nearly 25% to 16.5 million tons valued at $1.6 billion in 2009. Apparent consumption also decreased 25% to 16.5 million tons in 2009. In 2009, the average price at the plant increased 12% to $91.16 per ton for quicklime and increased 27% to $123.38 per ton for hydrate. Nevada has two large lime producers and several small producers. Although Nevada's production is confidential, it did not make the list of states (only four) which produced more than 1 million tons in 2009. Nevada had been on the list of states producing more than 1 million tons between 2002 and 2008. However, because of the price increase, the overall gross proceeds reported to the Nevada Department of Taxation increased 3%.

Nevada's largest producer, the Pilot Peak high-calcium lime operation of Graymont Western US, Inc. (formerly Continental Lime, Inc.) is in Proctor mining district in the Toano Range about 10 miles northwest of Wendover in Elko County. The plant has three kilns with a combined capacity of more than 700,000 tons of quicklime per year and a hydrated lime plant capable of producing 350 tons per day. Pilot Peak mainly markets lime to gold-mining operations for use in cyanide-solution pH control. Although lime production is confidential, gold production in Nevada declined nearly 12% in 2009, while gross proceeds for Pilot Peak reported to the Nevada Department of Taxation increased almost 8%. Production is mainly from the Middle to Late Devonian Devils Gate Limestone, which generally consists of interbedded limestone and dolomite.

Nevada's other large producer, Chemical Lime Co. produces lime at Apex in the Apex mining district about 20 miles northeast of Las Vegas. The operation makes high-calcium quicklime used in metallurgical processing, paper manufacturing, and environmental markets. The company also produces dolomitic lime and hydrated high calcium lime at Apex, mainly for construction uses. The company's Henderson plant processes Type S hydrated dolomitic lime for building and home construction. In addition to lime, Chemical Lime also shipped crushed limestone. Because of the decline in demand from the drop in the housing market, Chemical Lime idled their plant in

Grantsville, Utah, but the production capacity at their Apex and Henderson operations would be adequate to cover that closing. On January 1, 2009, Chemical Lime Co. also increased their prices $30 per ton in an effort to offset increased costs in energy, mining, raw materials, maintenance, and capital. Although production is confidential, despite the Grantsville closure and increase in prices, the gross proceeds reported to the Nevada Department of Taxation decreased 6%. Production is from the Middle to Late Devonian Sultan Limestone. The composition of the Sultan Limestone is generally as follows: the Ironside Dolomite Member (lower member) is mostly dolomite; the Valentine Limestone Member (middle member) ranges from more than half limestone to mostly dolomite; and the Crystal Pass Limestone Member (upper member) is nearly pure limestone.

Of Nevada's small lime producers, the Nutritional Additives Corp. produces agricultural and nutritional dolomite products along the northwest edge of the Sonoma Range about five miles south of Winnemucca. Production is from the Late Triassic Dun Glen Formation, which consists mainly of massive black dolomite with minor limestone and shale in its lower section. Min-Ad, Inc., a subsidiary of Inter-Rock Minerals Inc. of Toronto, Canada, also produced dolomite from the Dun Glen Formation about three miles south of the Nutritional Additives Corp. operation. Their dolomite is mostly sold into the midwestern U.S. and as far as New York State and Alberta, Canada, for use in beef and dairy feed. Along with gypsum and anhydrite, the Art Wilson Company of Carson City also produced some pure calcitic limestone from the Adams Mine. The limestone is used for soil pH control and reportedly contains no detectable magnesium.

Lithium

According to the U.S. Geological Survey, the estimated United States consumption of lithium decreased 40% to 1320 tons in 2009. Estimated consumption averaged 3,100 tons in the late 1990s to 2000, decreased rapidly to 1,200 tons in 2002, and increased rapidly to 2,750 tons in 2005 and 2006. Nevada is the only state with domestic production of lithium raw materials, and since this production is from one company, actual production and consumption figures are kept confidential to protect company proprietary data. The Nevada Department of Taxation reported the 2009 gross proceeds from lithium at $7,475,578, which was down 65% from 2008.

Subsurface brines have become the dominant raw material for lithium carbonate production worldwide because of low production costs as compared with the mining and processing costs for hard-rock ores. Lithium was produced as a by-product from brine in California since 1938; however, the Nevada operation, initiated at Silver Peak in Esmeralda County in 1966 by Cyprus Mines, was the first to extract lithium as the sole commercial product from brine. This operation was the world's dominant lithium producer until the late 1980s, when a Chilean lithium brine operation started up. South American sources, two brine operations in Chile and one in Argentina, where a second one is under development, now dominate the world market. U.S. lithium imports more than doubled between 2001 and 2005, though they have declined steadily 44% since then. Mostly of the increase was due to lithium-based rechargeable battery sales, which now account for 25% of the global lithium market. The U.S. price for lithium carbonate was about $2.00 per pound until the late 1990s, when large shipments of lithium carbonate began to be sold from the South American operations at about half list price. However, prices have risen recently due to increased demand for lithium for battery production. According to the journal *Industrial Minerals*, the price for lithium carbonate delivered in the U.S. was $2.80–3.00 per pound throughout 2009, the same as in 2008.

Chemetall Foote Co., a subsidiary of Chemetall GmbH and its parent company Rockwood Holdings, Inc., owns and operates the Silver Peak lithium facility. The company produces lithium carbonate, lithium hydroxide monohydrate, and lithium hydroxide anhydrite. The lithium chemicals are produced by solar evaporation preconcentration and subsequent refining techniques from brine that is pumped from beneath Clayton Valley playa. The brine varies between 100 and 300 ppm lithium. Production figures are confidential; the most recent public information, from 1998 Securities and Exchange Commission data, showed production of about 12 million pounds of lithium carbonate and 5 million pounds of lithium hydroxide. *Industrial Minerals* (July 2008) reported the remaining economic reserves to be about 44,000 tons. Through its subsidiary Sociedad Chilena de Lithio, Chemetall GmbH also runs a lithium operation in Antofagasta, Salar de Atacama, Chile. In 2009, Rockwood Holdings, Inc., announced that the U.S. Department of Energy awarded to Chemetall Foote $28.4 million in Recovery and Reinvestment Act funds to expand and upgrade production of lithium materials for advanced transportation batteries. Part of those funds will go to the

expansion of lithium carbonate production at Silver Peak (http://www.chemetalllithium.com).

A number of companies conducted brine exploration near Silver Peak. Canada Lithium Corporation of Toronto, Canada, and Gold Summit Corporation USA of Reno, Nevada, formed the Great Basin Joint Venture in 2008 to explore Gold Summit's Paymaster property, which covers about 12 square miles about 10 miles northeast of the Chemetall Foote Co. operation at Silver Peak. According each company's news releases, based on surface assays of up to 140 ppm lithium, a 1,200-foot exploration hole was drilled to locate intrabasinal aquifers and to sample any brines found in 2009. Conductive layers were intersected between 1,066 and 1,109 feet and between 1,138 feet and total depth. Assays on brines between 490 feet and total depth ranged between 130 and 940 ppm and averaged 316 ppm lithium. These assays indicated the presence of lithium-bearing clays, probably hectorite, but these clays would not be competitive with other such deposits with values in the 3,500 ppm range. Because of the low values, Canada Lithium withdrew from the joint venture (http://canadalithium.com; http://www.goldsummitcorp.com).

At the end of 2009, Gold Summit decided to concentrate on their gold and silver resources and made arrangements to sell their lithium assets to American Lithium Minerals, Inc., of Henderson, Nevada. American Lithium owns the Borate Hills Project, which covers over 3,400 acres between 15 and 20 miles west-northwest of Silver Peak. The Borate Hills project consists of three separate claim blocks: North Borate Hills and South Borate Hills in the northern Silver Peak Range in T1S, R37E and Fish Lake Deep on the east edge of Fish Lake Valley in T1S, R36E. In the 1980s, U.S. Borax drilled 57 holes up to 2,000 feet deep totaling 50,000 feet in the North Borate Hills and South Borate Hills areas. U.S. Borax identified a large deposit up to 1,300 feet thick ranking it as the second largest boron deposit in the country. Surface mineralization for at least 1.5 miles, and recent surface sampling at South Borate Hills assayed over 1% boron and up to 2,750 ppm lithium. Other Nevada lithium properties owned by American Lithium are Sarcobatus Flat in T8S, R44E and Teels Marsh Deep in T4N, R33E (http://www.americanlithium.com).

In 2009, Rodinia Lithium of Toronto, Canada, and its Wyoming subsidiary Donnybrook Platinum Resources, Inc., entered into an agreement with GeoXplor Corp. of West Vancouver, Canada, giving them the option to acquire 100% ownership in the

Clayton Valley Lithium Project. The Clayton Valley Lithium Project consists of the DB Placer and SP Placer Claim blocks covering 50,440 acres in Clayton Valley immediately surrounding most of Chemetall Foote's Silver Peak operation. Rodinia Lithium acquired a permit to drill three exploratory holes in conjunction with recently completed 2D seismic data to more accurately detail the geologic profile of the basin. An additional 2D seismic survey is also planned (http://www.rodinialithium.com; http://www.geoxplor.com).

In 2009, Colonnade Capital Corp. of Richmond, Virginia, had entered into a letter of agreement to acquire Next Lithium Corp. but then terminated the letter. In late 2009, Li3 Energy, Inc., of Lima, Peru, signed a letter of intent to acquire Next Lithium. Next Lithium had options to acquire 100% interests in the BSV Placer, CSV Placer, LM Placer, and MW Placer Claims, which together comprise about 75,000 acres of lithium brine properties at the south end of Big Smoky Valley between Coaldale and Tonopah. In the 1970s and 1980s, the U.S. Geological Survey drilled test holes in Big Smoky Valley, and two holes in this area brines with lithium values up to 365 ppm. Prior to this, Li3 had concentrated on acquiring lithium properties in Peru, Chile, and Argentina (http://www.li3energy.com).

In 2009, Black Hawk Exploration of Fox Island, Washington, formed the subsidiary Blue Lithium Energy and afterwards acquired the BMP Placer Claims. The BMP group consists of 56 placer claims covering 1,120 acres in Clayton Valley just north of Chemetall Foote's Silver Peak operation. Blue Lithium Energy received a permit from the BLM to drill an exploration hole (http://black-hawk-exploration.com).

In 2009, TNR Gold Corp. of Vancouver, Canada, signed a letter of agreement to acquire up to a 100% interest in the Sarcobatus Flats lithium brine property from Tonogold Resources, Inc., of La Jolla, California. The property consists of 105 placer claims covering 2,660 acres, and is located about 175 miles south of Tonopah. A preliminary sampling program of surface sediments contained assays ranging between 210 and 340 ppm lithium (http://www.tnrgoldcorp.com).

AmeriLithium Corp. of Henderson, Nevada, owns the Paymaster Canyon, Clayton Deep, and Full Monty Projects. The Paymaster Canyon Project consists of 5,880 acres in Paymaster Canyon just northeast of Clayton Valley. AmeriLithium recently had a gravity survey conducted there. The Clayton Deep Project consists of 5,280 acres covering the entire Southwest Gravity Low less than 10 miles southwest of

Silver Peak. The Full Monty Project consists of 5,760 acres about 25 miles north of Clayton Valley just west of Li3's MW Placer Claims in Big Smoky Valley (http://www.amerilithium.com).

In 2009, Western Lithium Corp. of Vancouver, Canada, continued with exploration and evaluation of the lithium resources in their Kings River Valley Project, Nevada. According to the company website and NI 43-101 report, Western Lithium has leased over 27,000 acres through almost 1,400 lode claims, mainly in the Disaster mining district in northern Humboldt County, from Western Energy Development Corporation for lithium exploration. The claims are within the McDermitt Caldera, and cover several areas containing inferred uranium resources and broader zones of uranium, molybdenum, and lithium mineralization. The lithium largely occurs in lithium-rich clays, including hectorite formed from the hydrothermal alteration of the volcaniclastic sedimentary rocks making up the moat deposits in the western part of the caldera. These lithium-bearing moat deposits extend north through the western Montana Mountains and Disaster Peak into Oregon. Significant lithium mineralization has been defined in five areas referred to as: PCD, North Lens, North Central Lens, South Lens, and South Central Lens by Chevron (who drilled the area in 1985) and Stages I through V by Western Lithium. In each area, the lithium-bearing clay hectorite occurs in thick, apparently continuous, accumulations with the zones of mineralization varying between about 3 and 300 feet thick. Drilling on the Stage I deposit in 2008 showed it contained indicated resources of 53 million tons grading 0.27% lithium (736,000 tons lithium carbonate equivalent) and inferred resources 47 million tons grading 0.27% lithium (668,000 tons lithium carbonate equivalent), both with a 0.2% cut-off grade. In 2009, Western Lithium started a drilling project on the Stage II deposit, which will include 38 core drill holes in the main part of the lens. Stage II is thought to be about seven times as large as Stage I. If all goes according to plan, Western Lithium proposes to have the deposits in production in 2014 (http://www.westernlithium.com).

Magnesia

According to the U.S. Geological Survey data, U.S. production of magnesium compounds decreased 7% to 281,000 tons in 2009. Production decreased 30% between 1997 and 2006, increased 21% 2007, and decreased 25% since then. About 54% of U.S. magnesia (MgO) production came from seawater and natural brines in

2009, and the rest was produced from mining magnesite ($MgCO_3$) and minor brucite ($Mg(OH)_2$) in Nevada and olivine in North Carolina and Washington. Apparent consumption decreased 40% to 388,000 tons in 2009 with most of the difference between consumption and production being made up by imports from China. Consumption has varied between 643,000 tons and 782,000 tons and averaged 701,000 tons for the ten years prior to 2009.

Premier Chemicals, LLC, of Cleveland, Ohio, owns the Gabbs magnesia operation in Nye County, which is the only place in the country to mine magnesite. Magnesite and some brucite (<5%) have been mined at Gabbs since 1935, and in the 1940s were processed in Henderson, Nevada, to make magnesium metal. From the 1950s to the 1980s, mining and processing was by Basic Industries, a major producer of refractory magnesia. During the 1990s, the availability of cheap foreign refractory magnesia caused production at Gabbs to be switched to light-burned (caustic calcined) magnesia that is mainly marketed for wastewater treatment and agricultural uses. According to the journal *Industrial Minerals*, the price for calcined magnesite delivered in the U.S. remained at $395 per ton through late 2008 and January 2009, rose to $417 mostly through May, and then averaged between $300 and $320 through the rest of the year.

Although production of magnesia at Gabbs is still substantially below its peak in 1981, magnesia shipments from the Gabbs operation increased steadily between 1996 and 2005. Production then see-sawed with decreases in 2006 and 2008 and increases in 2007 and 2009. Production is confidential, but the plant capacity is rated at about 150,000 tons per year. Also, Premier Chemicals, LLC, reports their annual production is about 300,000 tons of oxide and slurry products from their mine at Gabbs and their seawater extraction plant at Port St. Joe, Florida. The Nevada Department of Taxation reported the 2009 gross proceeds at $5,612,778, an increase of 16% from 2008. The magnesite and brucite occur as complex replacement bodies in Triassic dolomite in an area of about 1,300 acres in the Paradise Range just east of the town of Gabbs. The resource was estimated to be about 13 million tons in 1973 and is thought to be sufficient for more than 50 years of production at present mining rates.

In 2009, Molycor Gold Corp. of White Rock, Canada, published a NI43-101 technical report (*Tami-Mosi Property Evaluation Report*, May 1, 2009, by N. Tribe and Associates) on their Tami-Mosi magnesium property in the western foothills of the

Schell Creek Range between Tamberlain and Mosier Canyons about 6.5 miles southeast of Ely in White Pine County. The property consists of 140 claims covering 2,833 acres. The technical report notes an inferred resource of about 261.5 million tons of virtually pure dolomite grading 10% magnesium (more than 51 billion pounds of magnesium). The rock is in the Simonson Dolomite unit of the Devonian Guilmette Formation. Molycor received a proposal for dolomite beneficiation from Process Research Associates of Richmond, Canada, to evaluate the suitability of the dolomite at Tami-Mosi for upgrading by a brine or seawater process. The process would result in magnesium hydroxide that could be calcined into high-grade magnesia (http://www.molycor.com).

Perlite

According to the U.S. Geological Survey, U.S. production of perlite decreased 12% to 419,000 tons in 2009. Production had decreased 44% from about 800,000 tons in 1999 to about 451,000 tons in 2007 before increasing 6% in 2008. This is the lowest since 1963, when production was 404,000 tons, probably due to decreased usage in construction and to increased imports. Until 2005 the U.S. was the world's largest producer of perlite, but since then, Greece has been the largest producer. Apparent consumption decreased 18% to 529,000 tons, and imports decreased 28% to 149,000 tons in 2009. Imports have decreased 45% from record levels in 2006. About 59% of perlite production is used in building construction products, the manufacture of which is down because of the drop in construction. Over the last few years, the cost of rail transportation from western U.S. mines to some areas of the eastern U.S. have burdened domestic perlite producers with strong cost disadvantages compared with Greek perlite exporters. However, rising fuel prices and competition for ocean freight have increased shipping costs resulting in some customers returning to buying domestic perlite.

Nevada has large perlite resources, and several deposits of perlite in central Pershing, northern Lincoln, and southern Clark Counties have been mined extensively. However, the state now produces only minor amounts of perlite. Current perlite production in Nevada is restricted to relatively small-scale mining of two deposits for niche markets, and the state produces less than 1% of the domestic total.

Wilkin Mining and Trucking Inc. mines perlite from the Tenacity Perlite Mine in the South Pahroc Range Mining district about 25 miles west of Caliente in Lincoln County. The company has been mining perlite in the area for more than 25 years. The company has a small popping plant in Caliente, and present sales are almost exclusively of expanded perlite that is used for horticultural purposes. Most years, the company ships between 1,500 and 2,000 tons. The deposit consists of a large, flat-lying, 20-foot-thick perlite flow with obsidian pellets in Tertiary rhyolitic volcanic rocks, and in the 1950s was estimated to contain a reserve of over 15 million tons.

Noble Perlite produces expanded perlite from a plant in Fallon. They have eight placer claims about 20 miles south-southeast of Fallon on the south side of the White Throne Mountains, but these claims were not mined in 2009. Noble purchased ore in New Mexico, which was brought in by truck and train. Most of their processed perlite is microspheres used for fillers.

EP Minerals produces a small amount of expanded perlite that is marketed as a filter aid from its Colado diatomite plant in Pershing County. Plant capacity is reportedly about 8,000 tons per year, but 2009 production is not available. The crude perlite comes from the Popcorn Mine about 15 miles south of Fallon in Churchill County, which is usually mined a week or two per year.

Potassium Alum

The Rulco Potassium Sulfate Project was temporarily shut down throughout 2009, but claims were kept current. Between 2001 and 2008 small amounts of potassium alum (kalinite, $KAl(SO_4)_2 \cdot 11H_2O$) were shipped from the deposit in Esmeralda County about 10 miles north of Silver Peak by Rulco, LLC. The kalinite, which occurs with sulfur as veins and stringers in rhyolitic rock, was being marketed for horticultural use.

Pozzolan

Pozzolan is a silica- and generally alumina-rich material that, when combined with lime and water, reacts to make a form of cement. Named for Pozzuoli, Italy, source of a leucite tuff that was used in cement in Roman times, pozzolan is commonly made from rhyolite tuff, diatomite, or opaline chert. Pozzolan tends to counteract adverse

effects, such as alkali-silica reactions, of certain aggregates used in concrete (Glossary of Geology, American Geological Institute, 2005).

In 2009, the Fernley Planning Commission voted 3-2 and approved a special use permit for Nevada Cement Co. to operate their proposed Mustache Pozzolan Quarry on 25 acres of BLM land about 3 miles southwest of Fernley in section 28, T20N, R24E. The BLM has since also prepared an environmental assessment and finding of no significant impact on the plan of operation for the quarry. The quarry is proposed to operate for 25 years and produce up to 100,000 tons of material. The site is largely in Miocene to lower Pliocene Chloropagus Formation, which mainly consists of basaltic and andesitic lava flows and breccias interbedded with rhyolitic tuffs and minor sedimentary rocks. Shale would be mined at the rate of up to 20 dump truck loads at 20 to 30 tons each per day, six days per week, and hauled to the Nevada Cement Co. plant to be heated and turned into pozzolan. This locally produced pozzolan would reduce costs by reducing the need to import fly ash from coal-fired power plants or tuff from California, which are presently being used as pozzolan.

In 2008, the Phoenix Cement Company of Scottsdale, Arizona, staked a large block of placer claims covering parts of T1S and T2S, R67E in Lincoln County and kept these claims current through 2009. Part of this claim block covers the former Shamrock Pozzolan, LLC, claim block and the Silver Bells Project placer claims of David Free. Shamrock Pozzolan, LLC, had their corporate status revoked, and they dropped their claims in 2008. The Silver Bells Project covered an area estimated to contain about 4 million tons of pozzolanic ash that had been mined in the 1950s and 1960s for material used in the construction of Glen Canyon Dam. The pozzolanic ash is volcanic, white and granular when pure, and forms a layer up to 15 feet thick overlying lacustrine rocks of the Pliocene Panaca Formation under generally less than 15 feet of overburden. The project proposed to process up to 100 tons of material per day for up to 12 years to be used for cement additives in southern Nevada and elsewhere in the southwestern United States. David Free submitted a plan of operation and an environmental assessment was completed in 2004. The Silver Bells Project was permitted but was put on hold in 2007, and the claims were dropped in 2008. Phoenix Cement is owned by the Salt River Pima-Maricopa Indian Community and operates a large facility at Clarkdale, Arizona. They are part of the Salt River Materials Group, which supplies Portland and

masonry cements, fly ash and other pozzolans, normal and light weight aggregates, and natural gypsum across the southwestern U.S. including Nevada.

Salt

According to data from the Nevada Division of Minerals, the Huck Salt Company produced 25,053 tons of salt in 2009, a decrease of 4% from 2008. The salt is mainly used for de-icing roads, and production levels are dependent on weather. The salt is mined from a playa on Fourmile Flat about 25 miles southeast of Fallon in Churchill County, where it has been harvested almost continuously since the 1860s when it was hauled to the mills that processed Comstock silver and gold ore.

Silica

According to the U.S. Geological Survey, which reports silica as “Industrial Sand and Gravel,” the U.S. is by far the world’s largest producer of silica sand. In 2009, domestic production decreased 10% to 30.2 million tons valued at $827 million. Apparent consumption decreased 11% to 27.2 million tons. After increasing 16% from 1991 through 1994, between 1994 and 2003, production ranged between 30 million and 32 million tons and averaged 31 million tons and apparent consumption ranged between 28 million and 30 million tons and averaged 29 million tons. However, between 2004 and 2008, production ranged between 32 million and 34 million tons and averaged 33 million tons and apparent consumption ranged between 30 million and 32 million tons and averaged 31 million tons. The average price in 2009 decreased 0.3% to $27.37 per ton after rising steadily 73% between 1995 and 2008. About a third of the total is used in manufacturing glass and a fifth is used for hydraulic fracturing sand and well-packing and cement sand.

According to data from the Nevada Division of Minerals, Nevada’s major silica producer, Simplot Silica Products at Overton, Clark County, shipped about 413,000 tons of silica sand in 2009, a decrease of 17% from 2008 and a decrease of 45% from an average of about 750,000 tons produced in 2004 and 2005. The sand is mined from a large open pit in the relatively friable Cretaceous Baseline Sandstone, washed in the pit, and transported via a 5-mile slurry pipeline to a plant where it is screened and bagged. The facility produces four grades of sand based on coarseness, AFS 55, 60, 70, and 100. AFS 70, which is used mainly in manufacturing glass and foundry castings, is the

main product. Simplot proposed to expand its pit, and in 2009, the BLM issued an environmental assessment. Simplot estimated that silica sand resources in the current direction of mining would be exhausted in 6 months, and the expansion would enable to operations to continue another 30 to 40 years.

American Silica, Inc., a subsidiary of Fitch Industries, shut down their Mercury Mine about 3 miles southeast of Mercury in Nye County in April 2007 and their corporate status has since been revoked. The mine had produced silica construction sand containing about 98% SiO_2 from the Ordovician Eureka Quartzite. However, American Silica, Inc. still had 11 lode claims located in 2005 active in 2009, though 2009 was listed as the last assessment year. These claims were in the Arrow Canyon district about 15 miles north of Apex in Clark County and underlain by the Ordovician Eureka Quartzite.

In 2009, James Hardie Building Products, Inc. mined high purity silica from their Lucky Boy Quarry in the Lucky Boy district about 10 miles southwest of Hawthorne in Mineral County. They mined the Kramer Hill deposit about 1.5 miles south of Golconda in Humboldt County in 2008 but not in 2009. The quartzite is used as feed for the company's fiber-cement siding manufacturing plant in the Tahoe-Reno Industrial Park east of Sparks, Nevada. The Lucky Boy Quarry is in 1300-foot by 350-foot body of milky quartz hosted in granodiorite. A sample reportedly assayed 99.6% silica. The deposit was mined by the Hawthorne Silica Co. in the 1970s (NBMG Mining District File document 29300015). The Kramer Hill Quarry is in the Cambrian Osgood Mountain Formation, which generally consists of white to light gray, thinly bedded to massive, medium-grained quartzite.

Zeolites

Nevada contains large known resources of zeolite; however, zeolite production has been small and no zeolite is currently mined in Nevada. In 2009, Zeox Mineral Materials Corp. operated the Ash Meadows plant which ships 1,000 to 5,000 tons annually of clinoptilolite, $(Na,K,Ca)_{2\text{-}3}Al_3(Al,Si)_2Si_{13}O_{36}\cdot 12H_2O$, used in water filtration, odor control, and nuclear clean-up from their plant in Amargosa Valley in Nye County. The plant, which has a 40,000-ton annual capacity, also produces zeolite-based cement for building materials and oil and gas projects. The clinoptilolite is mined from a small

open pit just over the state line in Inyo County, California, in a large area of zeolite deposits that extends into Nevada.

According to their website, in 2009, Zeox pledged its U.S. assets as collateral for a $369,595 loan from Imagin Minerals, Inc., and the two companies began merger negotiations. The merger plans eventually fell through, and Imagin seized Zeox's U.S. assets and sold some of them to St. Cloud Mining Co. to cover the loan and $600,000 break-up fee. Zeox is taking legal action to get its assets back.

KMI Zeolite, Inc. owns a plant in Sandy Valley about 32 miles southwest of Las Vegas and a deposit reportedly containing about 60,000,000 tons of largely clinoptilolite in California about 85 miles northwest of the mill. The mill is capable of producing 55,000 tons per year.

In the past, the Moltan Company has mined small amounts of mordenite, $(Ca,Na_2,K_2)Al_2Si_{10}O_{24}{\cdot}7H_2O$, in the Trinity Range in Churchill County about 40 miles northeast of Fernley, but none was mined in 2009. The company uses mordenite to make absorbent products at its Fernley plant.

In 2008, Nevada Specialty Minerals, LLC, was formed as a joint venture to explore and develop the Lovelock zeolite deposit 13 miles northwest of Lovelock in the Trinity Range in the Gold Butte district of Pershing County. The new LLC's managers are listed as Castle Park Minerals, LLC, of Holladay, Utah, Steelhead Specialty Minerals, LLC, of Spokane, Washington, and Trabits Group, LLC, of Wasilla, Alaska. The Nevada Specialty Minerals, LLC, lease covers 1,280 acres. The Lovelock zeolite deposit contains ferrierite, $(Na,K)_2(Mg(Si,Al)_{18}O_{36}(OH){\cdot}9H_2O$, and mordenite with an outcrop area about 4,000 feet long from north to south, averaging 2,000 feet wide, and up to 55 feet thick near the center. The host rock is a series of Miocene or Pliocene unnamed sedimentary rocks and tuffs.

Trabits Group, LLC, holds licensed intellectual property involving a zeolite-containing cement and drilling-fluid technology, which requires the use of ferrierite. They have a 45% working interest in Nevada Specialty Minerals, LLC, which is in the design and construction phase of a mine and processing facility at the Lovelock deposit. Steelhead Specialty Minerals, LLC, makes zeolite-containing products for soil amendments, manure odor control, and radioactive wastewater treatment. They are also planning to use zeolite from the Lovelock deposit in their products.

Geothermal Energy

by Lisa Shevenell[1], Richard Zehner[2], Lowell Price[3], Linda Wells[3]
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OVERVIEW

During 2009 the Nevada Division of Minerals issued 195 geothermal well permits (up 62 permits from 2008) that included the following: six project area permits, 29 industrial production well permits, 10 industrial injection well permits, two commercial well permits, two domestic well permits, 124 gradient well permits, 22 observation well permits. A total of 71 geothermal wells of all types (see table of Nondomestic Geothermal Wells (below) for complete listing) were reported as drilled during 2009.

Nevada geothermal electrical production in 2009 from federal and private lands combined was 2,181,460 MWh gross and 1,669,056 MWh net. This was an increase in gross production of 468,366 MWh, compared to the 2008 increase of 170,062 MWh over 2007, and an increase in net production of 56,790 MWh from 2008. According to the Nevada Department of Taxation (Janet Kelley, oral comm., May 7, 2010), the total 2009 gross proceeds from geothermal power generation in Nevada was $110,817,345 (almost $16 million greater than in 2008), with the largest gross proceeds generated by the Steamboat complex at over $43,000,000. Net proceeds were $25,585,988 (Department of Taxation, 2010). These proceeds were not entirely from power generation but included Elko Heat Company's $207,107 gross proceeds from commercial heating.

Currently installed equipment, or nameplate, capacity at 11 existing geothermal power production sites in Nevada is 424.5 megawatts (MW), a 87.9 MW increase from 2008. Table 1 lists operators, plant locations, and energy production for individual Nevada geothermal power producers at the end of 2009. Figure 1 shows the location of these power plants. Nevada is second only to California in total installed geothermal generating capacity.

Table 1. Nevada geothermal power plants, 2009.

Plant name (year on line)	Nameplate Capacity (MW) [1]	In Service (MW)[1]	2009 Production (MWh) Gross	Net (sales)	Location	Operator
Beowawe (1985)	16.6	17.7	128,075	111,040	S13,T31N,R47E	TerraGen Operating Co., LLC 9590 Prototype Ct., #220 Reno, NV 89521 (775) 829-3900
Blue Mountain (Faulkner 1; 2009)	49.5	49.5	84,473	64,220	S14,T34N, R34E	Nevada Geothermal Power Suite 900 - 409 Granville Street Vancouver, BC, Canada, V6C 1T2 (866) 688-0808
Bradys Hot Springs (1992)	26.1	21.5	129,437	83,132	S12,T22N,R26E	Ormat Nevada 6225 Neil Rd Reno, NV 89511 (775) 356-9029
Desert Peak (1985)	Decommissioned				S21,T22N,R27E	Ormat Nevada 6225 Neil Rd Reno, NV 89511 (775) 356-9029
Desert Peak II (2006)[2]	23.0	19.0	123,988	97,738		
Dixie Valley (1988) [3]	62.0	--	470,497	426,342	S7,T24N,R37E S33,T25N,R37E	TerraGen Operating Co., LLC 9590 Prototype Ct., #220 Reno, NV 89521 (775) 829-3900
Empire (1987)	4.8	3.8	16,572	16546 [3]	S21,T29N,R23E	USG Nevada LLC P.O. Box 10 Empire, NV 89405 (775) 557-2015
Salt Wells (2009)	23.6	23.6	97,596	71,920		Enel North America 1755 East Plumb Lane, Suite 155 Reno, NV 89502 (775) 786-5681
Soda Lake No. 1 -1987	5.1	3.6	59,108	58893 [3]	S33,T20N,R28E	Magma Energy Corp 410 - 625 Howe Street Vancouver, BC V6C 2T6 (1991) Canada (604) 687-0407
Soda Lake No. 2	21.0	19.5				
Steamboat I (1986)[4]	7.4	0.0	0	0	S29,T18N,R20E	Ormat Nevada
Steamboat I-A (1986)	2.4	2.0	7,903	6,858	S29,T18N,R20E	6225 Neil Rd
Steamboat II (1992)	23.6	13.4	148,898	105,482		Reno, NV 89511
Steamboat III (1992)	23.6	13.4	158,554	113,766		(775) 356-9029
Galena (2005)	30.0	26.0	191,767	159,444		
Galena 2 (2007)	13.5	13.0	94,579	83,266		
Galena 3 (2008)	30.0	26.5	230,614	183,614		
Steamboat Hills (1988, formerly Yankee Caithness)	14.6	13.2	94,375	74,727	S5,6,T17N,R20E	
Steamboat Hills Expansion	5.5					
Stillwater (1989) isolated from the grid; shut down mid-January					S1,T19N,R30E	Enel Stillwater
Stillwater 2 (2009)	47.2	47.2	139,774	82,257	S6,T19N,R31E	1755 East Plumb Lane, Suite 155 Reno, NV 89502 (775) 786-5681
Wabuska (1984)	2.4	2.1	5,250	5,250	S15,16,T15N,R25E	Homestretch Geothermal 10 Julian Lane Yerington, NV 89447 (775) 463-4633
Total	**424.5**		**2,181,460**	**1,669,056**		

Footnotes to Table 1.

Source for production and power purchase agreement numbers (or in service as of 2009): NV Energy Portfolio Standard Annual Report, Compliance Year 2009, Tables 7 and 18.

[1]Nameplate capacity is the manufacturer's rating of equipment output capacity as reported to the Nevada Division of Minerals by the plant operators (as of February, 2010) and does not necessarily reflect the capability of the currently developed resource. These nameplate capacities are estimates, and several different values can be found in the literature. Generator nameplate capacity actually refers to how big the actual generator is but not the turbines or the actual capacity of the power plant. There are no public documents breaking down nameplate capacity of the turbines or gross power so these numbers may not adequately reflect actual generation (Dan Fleischmann, personal communication, June 1010). In service (MW) is the MW reported by NV Energy (2010) as in service in 2009.

[2]Desert Peak II is a new binary power plant that was built to replace the original steam turbine power plant at Desert Peak, which was permanently shut down on May 1, 2006. The new power plant came online on August 1, 2006 with a generation capacity of 23 MW, more than twice that of the original power plant.

[3]Values from NDOM digital files as they were not listed in NV Energy (2010).

[4]Ormat decommissioned the Steamboat I plant.

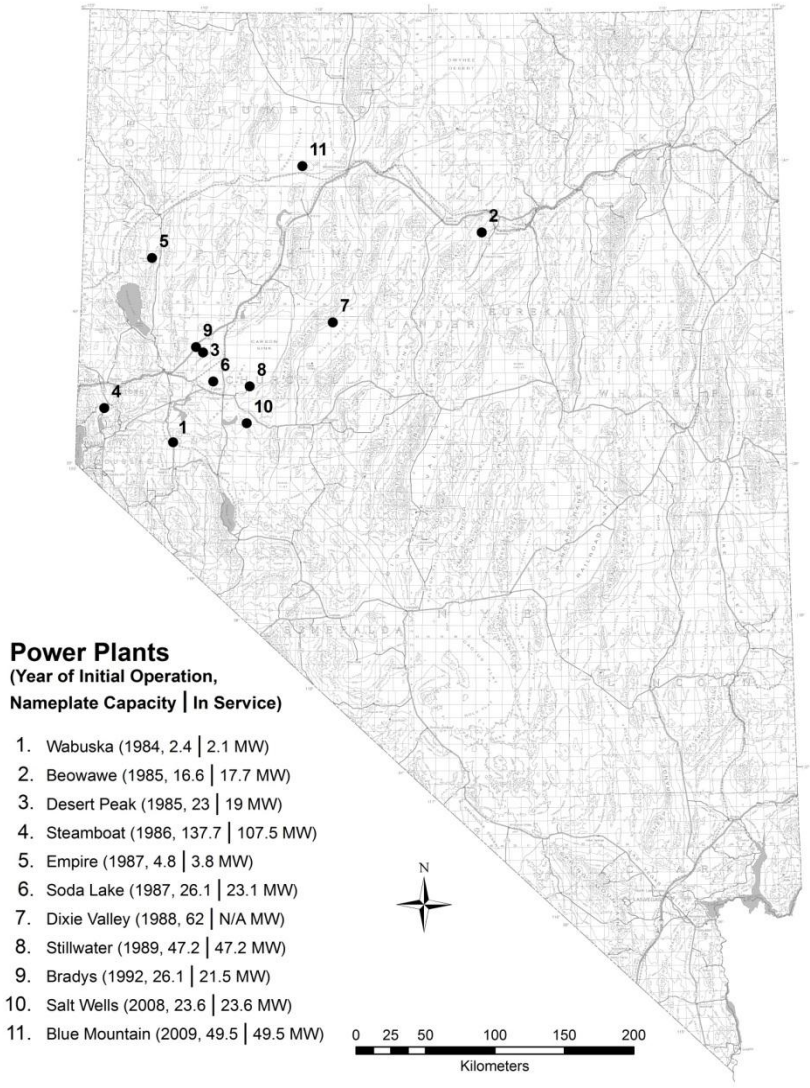

Figure 1. Locations of existing power plants noted in table 1.

In Nevada during 2009, there were 470 federal leases covering approximately 940,055 acres (380427 hectares), an increase from 2008 of 82 leases and 265,870 acres (107594 hectares). Figure 2 shows the location of active geothermal leases in Nevada.

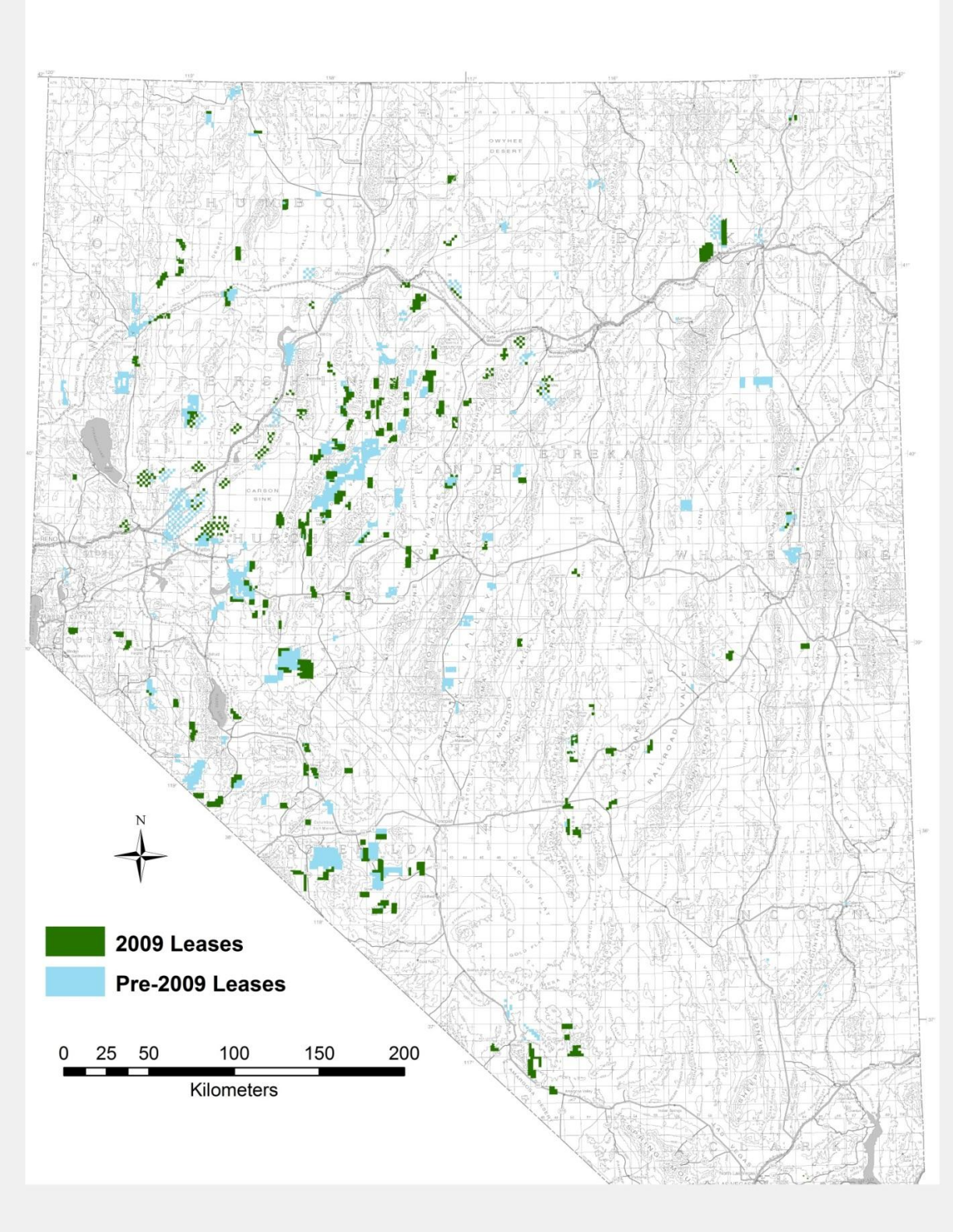

Figure 2. Locations of active leases in Nevada, highlighting the ones from 2009 in green.

On July 14, 2009, a lease sale was held that resulted in the sale of 82 parcels and yielded an approximate total lease sale income in Nevada of $8.9 million (table 2). Seventy-five percent of this income went to the State of Nevada (25% had gone to the counties of Nevada prior to the 2009 state budget crisis), and 25% went to the U.S. Department of Interior to help support BLM's geothermal program (BLM, 2009). Total Nevada lease sale income decreased by approximately $19 million from the same period in 2008 (Lorenzo Trimble, BLM, oral communication, May, 2010; Jordan Tucker, BLM, oral communication, June, 2010).

During 2009, the U.S. Department of Energy (DOE) awarded $338 million in American Recovery and Reinvestment Act (ARRA) funding for geothermal research and cost-shared drilling. The grants were awarded to 123 projects in 39 states to private industry, academic institutions, tribal entities, local governments, and DOE's national laboratories. The grants will be matched by the recipients with an additional $353 million in private and non-Federal cost-share funds, according to the DOE. The amount is an order of magnitude more funding allocated by DOE than has been done in decades, and significant progress and advances are expected in the coming years. At the end of 2009, there were 64 projects (some of which are partially funded through ARRA) in various stages of development in Nevada (in addition to the operating plants), which should result in the construction of between 1,876 and 3,473 MW of additional power generation capacity over the next 5 to 10 years (Jennejohn, 2009).

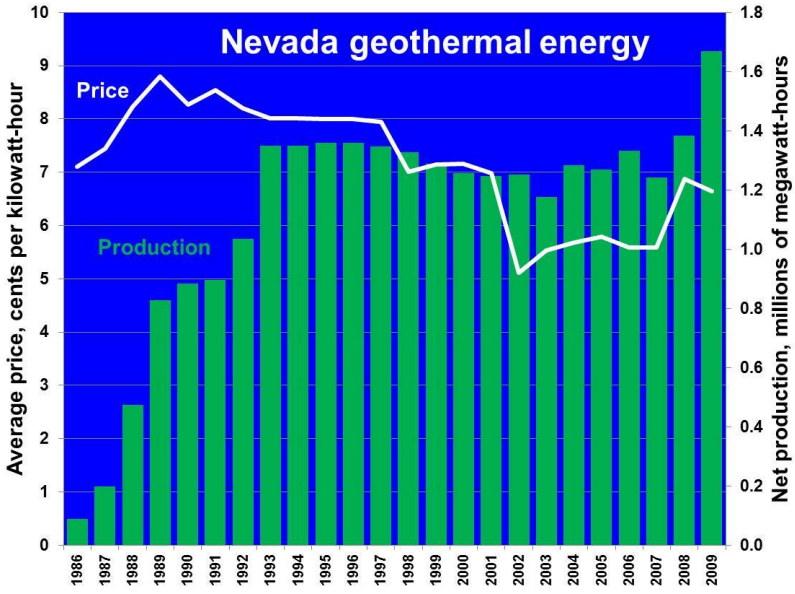

Figure 3. Graph of annual geothermal electric power produced and price paid (specific prices paid under individual contracts are held confidential by the utility and Nevada State Office of Energy), 1986-2009.

Table 2. 2009 BLM lease results. Price not available at the time of writing for those that were non-competitively leased.

PARCEL	LEASE	LOCATION	COMPANY	T (N)	R (E)	Sec	Bid/Acre	ACRES	Total
119	86938	Alkali Hot Springs	RAM Power, Inc.	1	41	10	$7.0	5,120 (2,072 ha)	$35,840
120	86939	Alkali Hot Springs	RAM Power, Inc.	1	41	35	$13.0	4,998 (2,022 ha)	$64,974
96	86915	Alligator Ridge	Oski Energy LLC	22	57	13	$2.0	1,920 (772 ha)	$3,840
97	86916	Alligator Ridge	Oski Energy LLC	22	57	26	$2.0	4,480 (1,813 ha)	$8,960
98	86917	Alligator Ridge	Oski Energy LLC	22	57	28	$2.0	3,680 (1,489 ha)	$7,360
58	86893	Antelope Valley	TGP Development Co., Inc.	26	36	20	$100.0	2,547 (1,031 ha)	$254,700
19	86871	Baltazor Hot Springs	Magma Energy Corp.	46	28	1	$55.0	3,133 (1,268 ha)	$172,333
22	86874	Baltazor Hot Springs	Magma Energy Corp.	47	30	20	$55.0	3,529 (1,268 ha)	$194,106
95	86914	Bartholomae Hot Springs	Allied Nevada Gold Corp.	18	51	31	$2.0	2,568 (1,039 ha)	$5,136
72	86900	Big Smoky Valley	RAM Power, Inc.	2	39	8	$4.0	4,473 (1,810 ha)	$17,892
73	86901	Big Smoky Valley	RAM Power, Inc.	2	39	27	$12.0	5,108 (2,067 ha)	$61,296
5	86940	Black Rock Desert	Earth Power Resources	33	24	20		2,539 (1,027 ha)	
4	86858	Black Rock Desert	Minera Cerro El Diablo Inc.	33	24	21	$2.0	1,920 (777 ha)	$3,840
3		Black Warrior	Minera Inc	24	24	26			
53	86891	Buena Vista Valley	Presco Energy	31	35	36	$2.0	3,950 (1,598 ha)	$7,899
89	89911	Buffalo Valley	Hallador Petroleum Co.	30	42	32	$12.5	4,998 (2,022 ha)	$62,469
88	89910	Buffalo Valley	Hallador Petroleum Co.	30	41	13	$20.0	4,972 (2,012 ha)	$99,442
85	86907	Buffalo Valley	Magma Energy Corp.	30	40	35	$55.0	4,940 (1,999 ha)	$271,679
86	86908	Buffalo Valley	Magma Energy Corp.	30	41	30	$65.0	4,514 (1,827 ha)	$293,420
90	86947	Buffalo Valley North	Earth Power Resources	32	41	32		1,918 (776 ha)	
118	86937	Clayton Valley	RAM Power, Inc.	4	39	9	$11.0	5,115 (2,070 ha)	$56,268
117	86936	Clayton Valley	RAM Power, Inc.	3	39	24	$15.0	5,086 (2,058 ha)	$76,292
103	86922	Diana's Punch Bowl	Standard Steam Trust LLC	39	59	12	$2.0	2,400 (971 ha)	$4,800
50	86888	Dixie Valley	Magma Energy Corp.	23	35	24	$360.0	2,799 (1,133 ha)	$1,007,618
62	87007	Dixie Valley	Standard Steam Trust LLC	22	37	17		2,550 (1,032 ha)	
57	86892	Dixie Valley	TGP Development Co., Inc.	24	36	21	$9.0	640 (259 ha)	$5,760
51	86889	Dixie Valley	TGP Development Co., Inc.	24	36	19	$525.0	5,045 (2,042 ha)	$2,648,713
69	86899	East of East Range	TGP Development Co., Inc.	27	38	9	$2.0	3,810 (1,542 ha)	$7,620
6	86859	Fireball Ridge	Geothermal Technical Partners	24	25	26	$2.0	1,280 (518 ha)	$2,560
41	86881	Gabbs Valley	Geoglobal Energy LLC	12	34	3	$5.0	1,918 (776 ha)	$9,592
40	86880	Gabbs Valley	Geoglobal Energy LLC	11	35	6	$10.0	3,835 (1,552 ha)	$38,347
42	86882	Gabbs Valley	Geoglobal Energy LLC	12	35	18	$30.0	5,102 (2,065 ha)	$153,062
43	86883	Gabbs Valley	Geoglobal Energy LLC	12	34	22	$30.0	5,108 (2,067 ha)	$153,246
44	86884	Gabbs Valley	Geoglobal Energy LLC	12	34	36	$32.5	3,200 (1,295 ha)	$104,000
87	86909	Golconda	Minera Cerro El Diablo Inc.	35	40	4	$12.0	640 (259 ha)	$7,683
18	86941	Granite Springs Valley	Earth Power Resources	27	28	30		3,637 (1,472 ha)	
13	86866	Granite Springs Valley	Magma Energy Corp.	28	27	28	$5.0	5,110 (2,068 ha)	$25,550
12	86865	Granite Springs Valley	Magma Energy Corp.	28	27	25	$5.5	5,120 (2,068 ha)	$28,160
10	86863	Granite Springs Valley	Magma Energy Corp.	27	27	34	$20.0	4,480 (1,813 ha)	$89,600
9	86862	Granite Springs Valley	Magma Energy Corp.	27	27	4	$55.0	5,051 (2,044 ha)	$277,780
7	86860	Hazen Southeast	Earth Power Resources	19	26	2	$2.0	2,331 (943 ha)	$4,662
8	86861	Hazen Southeast	Earth Power Resources	19	26	16	$2.0	580 (235 ha)	$1,160
92	86912	Hot Pot	Oski Energy LLC	35	43	16	$3.0	2,543 (1,029 ha)	$7,630

PARCEL	LEASE	LOCATION	COMPANY	T (N)	R (E)	Sec	Bid/Acre	ACRES	Total
46	86885	Humboldt Salt Marsh	ORMAT	22	35	29	$8.0	1,437 (581 ha)	$11,494
49	86887	Humboldt Salt Marsh	Paul Pluviez	21	35	10	$2.0	3,790 (1,534 ha)	$7,581
80	86905	McCoy Hg Mine	Magma Energy Corp.	23	40	9	$2.0	3,620 (1,465 ha)	$7,240
14	86867	McGee Mountain	Geothermal Technical Partners	45	27	14	$2.5	1,280 (518 ha)	$3,200
115	86934	Mineral Hot Springs	Geothermal Technical Partners	45	64	10	$2.0	1,280 (518 ha)	$2,560
116	86935	Mineral Hot Springs	Geothermal Technical Partners	45	64	17	$7.0	618 (250 ha)	$4,328
110	86929	Monte Neva Hot Spring	Allied Nevada Gold Corp.	21	63	22	$4.5	3,494 (1,414 ha)	$15,722
114	86933	Monte Neva Hot Spring	Minera Cerro El Diablo Inc.	21	64	31	$2.0	1,120 (453 ha)	$2,239
111	86930	Monte Neva Hot Spring	Minera Cerro El Diablo Inc.	21	63	25	$8.0	2,422 (980 ha)	$19,376
21	86873	Mopung Hills	Magma Energy Corp.	23	29	2	$2.5	3,840 (1,554 ha)	$9,599
93	86951	Mound Springs	Geothermal Technical Partners	28	44	16		3,839 (1,554 ha)	
74	86902	New Pass	Geothermal Technical Partners	20	39	9	$2.0	2,560 (1,036 ha)	$5,120
52	86890	New York Canyon	TGP Development Co., Inc.	25	35	32	$2.0	5,120 (2,072 ha)	$10,240
32	86949	Northern Gabbs Valley,	Earth Power Resources	13	33	14		1,920 (777 ha)	
120	86939	Paymaster Ridge	RAM Power, Inc.	1	41	31	$13.0	4,998 (2,023 ha)	$64,974
68	86952	Pleasant Valley	TGP Development Co., Inc.	28	38	25		2,558 (1,035 ha)	
23	86942	Red Butte	Earth Power Resources	38	30	32		3,845 (1,556 ha)	
24	86943	Red Butte	Earth Power Resources	37	30	21		2,560 (1,036 ha)	
47	86886	Rhodes Marsh	Geothermal Technical Partners	5	35	12	$25.0	480 (194 ha)	$12,000
34	86876	Rye Patch	Presco Energy	31	33	16	$2.0	320 (129 ha)	$640
35	86877	Rye Patch	Presco Energy	31	33	20	$2.0	640 (259 ha)	$1,280
36	87878	Rye Patch	Presco Energy	31	33	28	$2.0	160 (65 ha)	$320
38	86879	Rye Patch	Presco Energy	31	33	34	$2.0	310 (125 ha)	$619
77	86903	Smith Creek Valley	Hallador Petroleum Co.	19	40	26	$2.0	5,117 (2,071 ha)	$10,235
78	86904	Smith Creek Valley	Hallador Petroleum Co.	19	40	24	$2.0	4,479 (1,812 ha)	$8,958
15	86868	Soda Lake	Magma Energy Corp.	19	28	4	$2.0	1,077 (436 ha)	$2,155
16	86869	Soda Lake	Magma Energy Corp.	20	28	2	$2.0	3,017 (1,221 ha)	$6,035
17	86870	Soda Lake	Magma Energy Corp.	20	28	10	$2.0	5,096 (2,062 ha)	$10,193
20	86872	Soda Lake	Magma Energy Corp.	20	29	34	$2.0	3,771 (1,526 ha)	$7,541
84	86906	Southern Buffalo Valley	Magma Energy Corp.	28	40	3	$2.0	3,730 (1,510 ha)	$7,460
65	86897	Southern Edwards Creek Valley	ORMAT	21	38	22	$3.0	800 (324 ha)	$2,400
66	86898	Southern Edwards Creek Valley	Standard Steam Trust LLC	21	38	33	$2.0	600 (243 ha)	$1,200
60	86894	Southern Edwards Creek Valley	Standard Steam Trust LLC	20	37	13	$32.5	1,320 (534 ha)	$42,900
61	86895	Southern Edwards Creek Valley	Standard Steam Trust LLC	20	37	36	$35.0	4,331 (1,753 ha)	$151,600
63	86896	Southern Edwards Creek Valley	Standard Steam Trust LLC	20	38	18	$75.0	1,965 (795 ha)	$147,385
104	86923	St. Mary's River	Standard Steam Trust LLC	37	60	6	$2.0	1,288 (521 ha)	$2,577
105	86924	St. Mary's River	Standard Steam Trust LLC	38	60	6	$2.0	2,922 (1,183 ha)	$5,844
106	86925	St. Mary's River	Standard Steam Trust LLC	38	60	32	$2.0	1,281 (519 ha)	$2,563
107	86926	St. Mary's River	Standard Steam Trust LLC	39	60	20	$2.0	1,922 (778 ha)	$3,844
109	86928	Steptoe Valley	Allied Nevada Gold Corp.	19	63	24	$2.0	3,680 (1,489 ha)	$7,360
112	86931	Steptoe Valley	Allied Nevada Gold Corp.	19	64	19	$2.0	4,973 (2,013 ha)	$9,946
113	86932	Steptoe Valley	Allied Nevada Gold Corp.	19	64	29	$2.0	3,616 (1,463 ha)	$7,231
108	86927	Steptoe Valley	Allied Nevada Gold Corp.	18	64	7	$4.0	3,135 (1,269 ha)	$12,540
27	86950	Teels Marsh	Geothermal Technical Partners	4	32	26		5,120 (2,072 ha)	

PARCEL	LEASE	LOCATION	COMPANY	T (N)	R (E)	Sec	Bid/Acre	ACRES (ha)	Total
76	86946	Tobin Range	Earth Power Resources	29	39	12		1,042 (422 ha)	
91	86948	Vigus Buttes west	Earth Power Resources	19	42	28		5,093 (2,061 ha)	
94	86913	Walti Hot Springs area	Allied Nevada Gold Corp.	24	47	36	$5.5	3,867 (1,565 ha)	$21,269
102	86921	West of Cross Ranch	Standard Steam Trust LLC	38	59	32	$2.0	640 (259 ha)	$1,280
25	86875	Whiskey Flats	Oski Energy LLC	5	31	6	$5.5	2,479 (1,003 ha)	$13,633
39	86945	White Peaks	Earth Power Resources	40	33	6		4,937 (1,998 ha)	
99	86918	Winter Creek warm springs	Standard Steam Trust LLC	37	58	24	$2.0	1,356 (549 ha)	$2,712
100	86919	Winter Creek warm springs	Standard Steam Trust LLC	37	58	26	$2.0	727 (294 ha)	$1,455
101	86920	Winter Creek warm springs	Standard Steam Trust LLC	37	59	30	$2.0	1,280 (518 ha)	$2,559

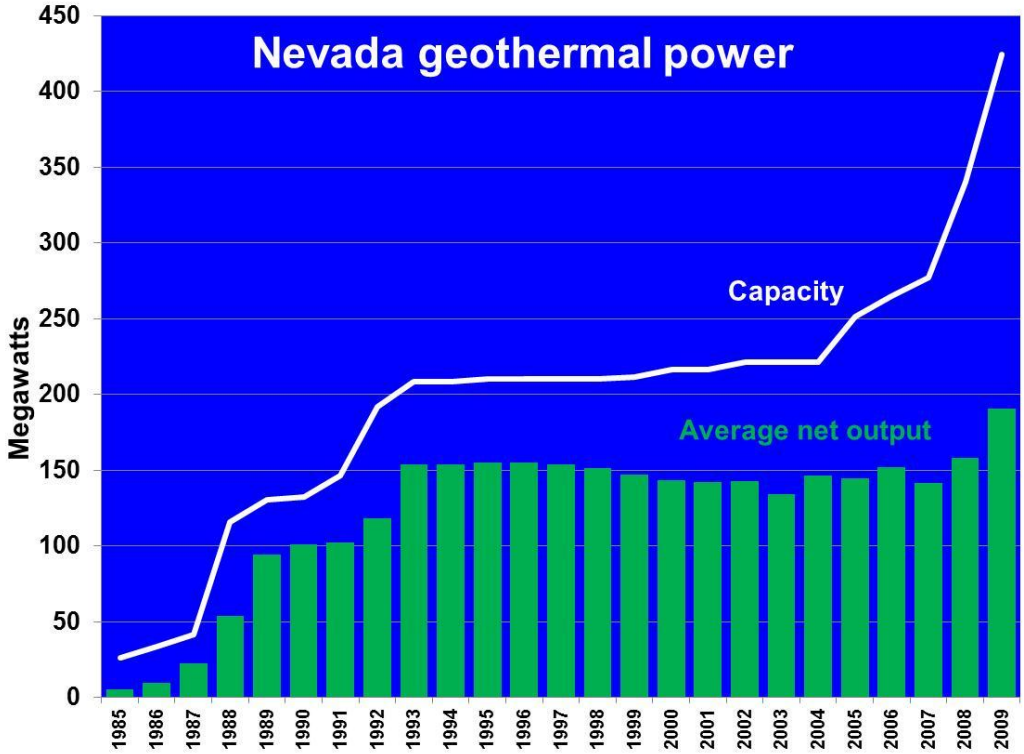

Figure 4. Currently developed resource capacity and average net output of Nevada geothermal plants, 1985–2009. Average net output is annual sales in megawatt-hours divided by the number of hours in a year (8,760). No commercial geothermal power was produced in Nevada before 1985.

Table 3. Nondomestic geothermal wells reported as drilled, redrilled, or completed during 2009.

Area	Company Name	Well Type[1]	Well Number	Permit Number	Location	Permitted Depth (ft)	SPUD Date[2]	Application Date
Churchill County								
Carson Lake Basin	Vulcan Power Company	TG	76-9	914	NW/4, SE/4, S 09, T17N, R30E	1,000	05/26/2009	05/22/2009
	Vulcan Power Company	P	34-33	682	SE/4, NW/4, S 33, T17N, R30E	10,000	04/11/2009	02/16/2007
Desert Peak	Ormat Nevada	P	11-27	884	NW/4, NW/4, S 27, T22N, R27E	±3000	02/02/2009	01/26/2009
	Ormat Nevada	P	62-28	780	NW/4, NE/4, S 28, T22N, R27E	±1500	01/05/2009	04/28/2008
Fallon / Carson Lake	Vulcan Power Company	O	14-1	904	SW/4, NW/4, S 01, 17N, 30E	3,500	05/10/2009	04/17/2009
Patua	Vulcan Power Company	O	44-1	878	SE/4, NW/4, S 1, T20N, R26E	7,000	01/20/2009	01/08/2009
	Vulcan Power Company	O	23A-17	873	SW/4, NW/4, S 17, T20N, R26E	7,000	02/08/2009	11/18/2008
	Vulcan Power Company	O	28-13	872	SW/4, SW/4, S 13, T20N, R26E	7,000	01/09/2009	11/18/2008
Salt Wells	Vulcan Power Company	O	1-11	881	NW/4, NW/4, S 11, T16N, R30E	1,000	05/12/2009	01/21/2009
	Vulcan Power Company	O	1-10	882	SE/4, NW/4, S 10, T16N, R30E	1,000	04/28/2009	01/21/2009
	Vulcan Power Company	O	1-33	883	SE/4, NW/4, S 10, T16N, R30E	1,000	05/20/2009	01/21/2009
	Vulcan Power Company	P	51A-20	891	NW/4, NE/4, S 20, T17N, R30E	10,000	02/21/2009	02/23/2009
Salt Wells	Enel North America	I	33-25	907	SE/4, NW/4, S 25, T17N, R30E	3,000	06/22/2009	04/20/2009
Soda Lake	Magma Energy (U. S.) Corp.	P	45A-33	912	SE/4, NW/4, S 33, T20N, R28E	6,000	05/17/2009	04/07/2009
	Magma Energy (U. S.) Corp.	P	41B-33	913	NE/4, NW/4, S 33, T20N, R28E	6,500	06/17/2009	04/07/2009
Stillwater	Enel North America	P	31A-30	921	NE/4, NW/4, S 30, T20N, R31E	±2500	07/09/2009	06/11/2009
	Enel North America	P	53A-30	926	SW/4, NE/4, S 30, T20N, R31E	±2500	07/26/2009	06/24/2009
	Enel North America	I	88-1	950	SE/4, SE/4, S 01, T19N, R30E	±3500	08/18/2009	08/06/2009
Esmeralda County								
Alum	Sierra Geothermal Power, Inc.	O	25-29	1052	NW/4, SW/4, S 29, T01N, R38.5E	8,000	11/08/2009	10/19/2009
Silver Peak	Sierra Geothermal Power, Inc.	TG	18A-11	1039	SW/4, SW/4, S 11, T02S, R39E	1,000	10/22/2009	09/08/2009
	Sierra Geothermal Power, Inc.	TG	53-15	1040	SW/4, NE/4, S 15, T02S, R39E	1,000	10/30/2009	09/18/2009
	Sierra Geothermal Power, Inc.	TG	41-10	860	NW/4, NE/4, S 10, T2S, R39E	500	10/10/2009	09/28/2008
	Sierra Geothermal Power, Inc.	TG	65-10	852	NW/4, SE/4, S 10, T2S, R39E	500	10/13/2009	09/28/2008
	Sierra Geothermal Power, Inc.	TG	43-11	858	SE/4, NW/4, S 11, T2S, R39E	500	10/08/2009	09/28/2008
	Sierra Geothermal Power, Inc.	TG	73-2	851	SE/4, NE/4, S 2, T2S, R39E	500	12/27/2009	09/28/2008
	Sierra Geothermal Power, Inc.	TG	26-14A	863	NW/4, SW/4, S 14, T2S, R39E	500	09/14/2009	09/28/2008
	Sierra Geothermal Power, Inc.	TG	43-14A	857	SE/4, NW/4, S 14, T2S, R39E	500	09/19/2009	09/28/2008
	Sierra Geothermal Power, Inc.	TG	56-11A	854	NW/4, SE/4, S 11, T2S, R39E	500	09/28/2009	09/28/2008
	Sierra Geothermal Power, Inc.	TG	74-11	850	SE/4, NE/4, S 11, T2S, R39E	500	09/30/2009	09/28/2008
	Sierra Geothermal Power, Inc.	TG	58-14	853	SW/4, SE/4, S 14, T2S, R39E	500	09/08/2009	09/28/2008
Humboldt County								
Blue Mtn.	Nevada Geothermal Power Co.	I	61-22	885	NW/4, NE/4, S 22, T36N, R34E	±6000	03/21/2009	02/02/2009
	Nevada Geothermal Power Co.	I	58B(52-22)-15	887	SW/4, SE/4, S 15, T36N, R34E	6,000		02/06/2009
	Nevada Geothermal Power Co.	I	58-11	1068	SE/4, SW/43, S 11, T 36, T36N, R	~7000	12/05/2009	11/02/2009
	Nevada Geothermal Power Co.	I	55-15	766	NW/4, SE/4, S 15, T36N, R34E	6,000	11/19/2009	02/29/2008
	Nevada Geothermal Power Co.	I	17-14	756	SW/4, SW/4, S 14, T36N, R34E	6,000	01/07/2009	01/31/2008
	Nevada Geothermal Power Co.	I	15-14	755	NW/4, SW/4, S 14, T36N, R34E	6,000	02/03/2009	01/31/2008
Hot Pot / Valmy	Hot Pot Geothermal, LLC	TG	HP TG1-1	931	NW/4, NE/4, S 01, T35N, R43E	500	9/15/2009	06/18/2009
	Hot Pot Geothermal, LLC	TG	HP TG3-1	932	NE/4, SE/4, S 03, T35N, R43E	500	9/22/2009	07/13/2009
	Hot Pot Geothermal, LLC	TG	HP TG9-1	934	SW/4, NW/4, S 09, T35N, R43E	500	09/20/2009	06/18/2009
	Hot Pot Geothermal, LLC	TG	HP TG13-1	936	SW/4, NE/4, S 13, T35N, R43E	500	09/11/2009	06/18/2009
	Hot Pot Geothermal, LLC	TG	HP TG15-1	937	C, S 15, T35N, R43E	500	09/17/2009	06/18/2009
	Hot Pot Geothermal, LLC	TG	HP TG27-1	939	C, S 27, T35N, R43E	500	09/08/2009	06/18/2009
Lander County								
McGinness Hills	Ormat Nevada	O	38-10	910	SE/4, SW/4, S 10, T20N, R45E	4,000	05/18/2009	05/06/2009
	Ormat Nevada	TG	61-22	915	NW/4, NE/4, S 22, T20N, R45E	500	08/25/2009	05/07/2009
	Ormat Nevada	TG	67-22	916	NE/4, SE/4, S 22, T20N, R45E	500	08/13/2009	05/07/2009
	Ormat Nevada	TG	73-22	917	NW/4, SE/4, S 22, T20N, R45E	500	08/19/2009	05/07/2009
	Ormat Nevada	TG	85-22	919	NE/4, SE/4, S 22, T20N, R45E	500	08/17/2009	05/07/2009
	Ormat Nevada	TG	28-10	943	SW/4, SW/4, S 10, T20N, R45E	±6020	08/09/2009	06/18/2009
	Ormat Nevada	TG	86-16	944	NE/4, SE/4, S 16, T20N, R45E	±6020	10/07/2009	06/18/2009
	Ormat Nevada	O	58B-22	1046	SW/4, SE/4, S 22, T20N, R45E	±3500	10/10/2009	09/28/2009
	Ormat Nevada	TG	27-16	1067	SW/4, SW/4, S 16, T20N, R45E	6,020	12/03/2009	10/29/2009
Reese River	Sierra Geothermal Power, Inc.	TG	14-5	1053	SW/4, NW/4, S 5, T23N, R43E	1,000	11/13/2009	11/02/2009
	Sierra Geothermal Power, Inc.	TG	23-3	1055	SW/4, NW/4, S 3, T23N, R43E	1,000	12/06/2009	11/02/2009
	Sierra Geothermal Power, Inc.	TG	27-32	1056	SW/4, SW/4, S 32, T24N, R43E	1,000	11/15/2009	11/02/2009
	Sierra Geothermal Power, Inc.	TG	32-34	1057	NE/4, NW/4, S 34, T24N, R43E	1,000	12/12/2009	11/02/2009
	Sierra Geothermal Power, Inc.	TG	33-6	1058	SE/4, NW/4, S 6, T23N, R43E	1,000	11/09/2009	11/02/2009
	Sierra Geothermal Power, Inc.	TG	41-35	1059	NE/4, NW/4, S 34, T24N, R43E	1,000	12/01/2009	11/02/2009
	Sierra Geothermal Power, Inc.	TG	54-35	1061	SW/4, NE/4, S 35, T24N, R43E	1,000	11/19/2009	11/02/2009
	Sierra Geothermal Power, Inc.	TG	65-8	1064	NW/4, SE/4, S 8, T23N, R43E	1,000	12/10/2009	11/02/2009
	Sierra Geothermal Power, Inc.	TG	66-33	1065	NW/4, SE/4, S 33, T24N, R43E	1,000	12/03/2009	11/02/2009
	Sierra Geothermal Power, Inc.	TG	73-32	1066	SE/4, NE/4, S 32, T24N, R43E	1,000	11/17/2009	11/02/2009

[1] I = Injection, O = Observation, P = Production, TG = Thermal Gradient, D = Domestic

[2] Date well drilling began.

Table 3 (continued).

Area	Company Name	Well Type[1]	Well Number	Permit Number	Location	Permitted Depth (ft)	SPUD Date[2]	Application Date
Lyon County								
Hazen	Vulcan Power Company	P	23-17	826	SW/4, NW/4, S 17, T20N, R26E	10,000	06/14/2009	07/25/2008
	Vulcan Power Company	P	37-17	827	SE/4, SW/4, S 17, T20N, R26E	10,001	02/07/2009	07/25/2008
Pershing County								
Lovelock Correctional	Noresco, LLC	TG/O	No. 1	888	NW/4, NE/4, S 9, T27N, R32E	Unknown	02/17/2009	02/06/2009
Jersey Valley	Ormat Nevada	P	87-28	902	SE/4, SE/4, S 28, T27N, R40E	±6000	05/24/2009	04/08/2009
	Ormat Nevada	P	77-28	876	SE/4, SE/4, S28, T27N, R40E	±6000	03/16/2009	12/22/2008
	Ormat Nevada	P	77A-28	979	SE/4, SE/4, S 28, T27N, R40E	±6000	08/16/2009	08/14/2009
	Ormat Nevada	P	81A-28	1070	NE/4, NE/4, S 28, T27N, R40E	±4200	12/01/2009	11/19/2009
Washoe County								
Moana	Peppermill Casinos, Inc.	P	9	1069	NE/4, SW/4, S 24, T19N, R19E	4,500	12/29/2009	11/24/2009
	Peppermill Casinos, Inc.	P	8	953	SW/4, S 24, T19N, R19E	3,500	08/28/2009	08/05/2009
Moana	Department of Veterans Affairs	O	1	980	SE/4, NW/4, S 13, T19N, R19E	1,600	09/14/2009	08/05/2009
Total Drilled in 2009				**71**		**157,121**		

[1] I = Injection, O = Observation, P = Production, TG = Thermal Gradient, D = Domestic

[2] Date well drilling began.

A three-year comparison shows the steady increase in geothermal activity between federal fiscal years 2007 and 2009 (table 4). Note that wells are not necessarily drilled in the same year in which they are permitted. Drilling permits are valid for two years from the date of approval. Additionally, table 5 shows the changes in BLM permitting results over four years (one lease sale was conducted each year). The peak in revenue was in 2008, whereas the peak in acres and parcels sold was in 2009. Activity and prices appear to have leveled off in 2010.

Table 4. Geothermal drilling activity, 2007-2009.

Year	Number of permits	Number of wells drilled	Number of production wells drilled
2007	71	41	5
2008	130	53	16
2009	195	71	16

Table 5. Geothermal leasing activity, 2007-2010.

Year	Parcels offered	Parcels sold	Acres	Total receipts	Average per acre
2007	43	43	122,849	$11,669,821	$94.99
2008	35	35	105,212	$28,207,806	$268.11
2009	108	82	323,223	$8,909,445	$27.56
2010	114	75	212,370	$2,762,292	$13.01
Total	**300**	**235**	**763,653**	**$51,549,364**	

Source: http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/geothermal0/ggeothermal_leasing.html

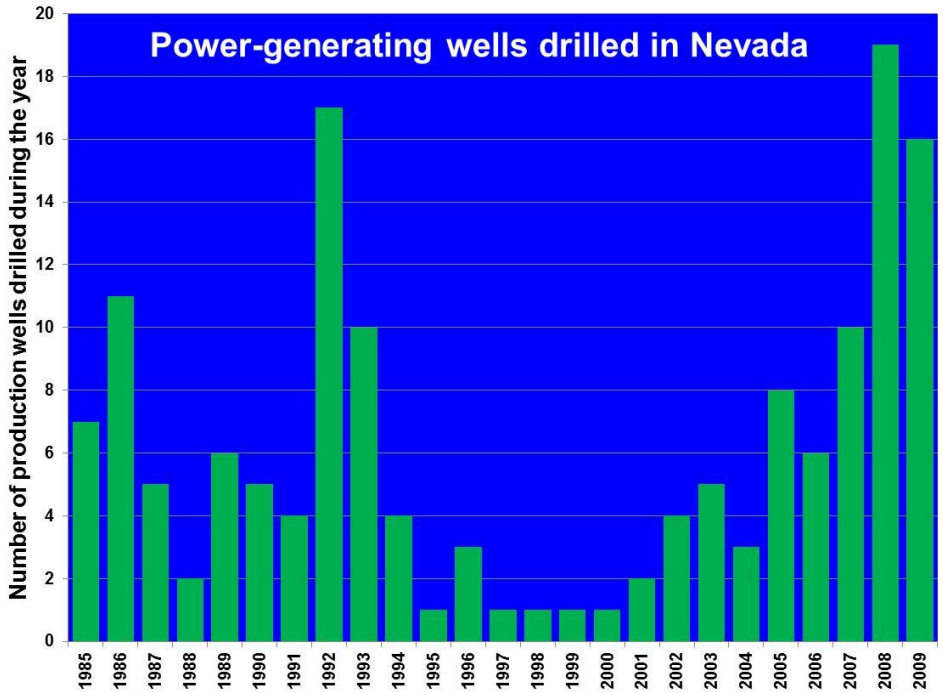

Figure 5. Industrial-class (power-generating) wells drilled in Nevada, 1985–2009 (excludes injection, observation and gradient wells).

ALUM GEOTHERMAL AREA, ESMERALDA COUNTY

The 7,198-acre (2,913 hectare) Alum project was drilled in the 1970s and 1980s by Amax Exploration, Phillips Petroleum, and O'Brien Resources (46 thermal gradient holes). Geothermometer temperatures indicate a reservoir temperature of up to 225°C (437°F). The maximum bottom-hole temperature from prior drilling was 118°C (244.4°F) at 1,493 ft. (455 m). In November 2009, Sierra Geothermal Power (SGP) completed ground-based magnetotellurics and airborne Z-Axis Tipper Electromagnetic surveys and the drilling of well 25-29, which reached 126^{o}C (258.8°F) at 2,034 ft. (620 m). SGP was awarded a $5 million DOE grant, which included funds to be used at Alum for day/night thermal infrared imagery, 3D resistivity, shallow temperature surveys, and drilling.

BLUE MOUNTAIN GEOTHERMAL AREA, HUMBOLDT COUNTY

The **Nevada Geothermal Power, Inc. (NGP)** Blue Mountain project area covers approximately 17.2 square miles (44.5 km^2) in Humboldt County, Nevada above a blind geothermal system with no visible hydrothermal features at the surface. It was located during gold exploration drilling. NGP signed a fixed-price, date-certain engineering, procurement, and construction (EPC) contract with Ormat Nevada, a subsidiary of Ormat Technologies Inc., to

construct the Blue Mountain Faulkner I binary cycle geothermal power plant by December 31, 2009. Maximum temperatures encountered at the site are 188°C (370.4°F) at approximately 2,000 ft (610 m) (Niggeman et al., 2009). Ormat completed construction of the plant approximately three months ahead of schedule, and NGP brought the plant on line in September 2009, and held the official dedication ceremony on October 22, 2009. As well-field development drilling has moved forward, it appears that the Blue Mountain geothermal resource should be able to eventually support power production at the level of 49.5 MW gross, 39.5 net. As of November 2009, Blue Mountain was producing power at a sustainable rate of 27 megawatts (MW) net as plant output was limited by deep injection capacity. Three additional deep wells were planned to bring the plant up to a capacity of greater than 40 MW (net). Capacity by the end of 2009 was up to 30.5 MW (net). The company reported that Department of Treasury grant funds ($57.9 million awarded) will be used to complete additional drilling and pipeline connection. Early production wells 14-14, 15-14 and 17-14 have production capacities between 7 and 7.5 MW (net) each, similar to the three original wells drilled (23-14, 25-14, 26A-14 (3/9 company press release). The resource is an artesian reservoir at or below an elevation of about 1,100 ft (about 335 m), and geothermometers predict reservoir temperatures of 250°C (about 482°F) at depth. Waters produced are oversaturated with respect to silica, causing a potential for scaling, which will be mitigated by chemical inhibition (Casteel et al., 2009). NGP completed construction of a 20-mile-long 120 kV overhead transmission line that connects to the electric grid just north of Mill City with an approved capacity of 75 MW. The path of the transmission line traverses a checkerboard of land ownership that is approximately 50% private land and 50% public land administered by the Bureau of Land Management. NGP completed its production well drilling program for the first phase of the project. Due to the checkerboard nature of the property, NGP acquired the mineral rights to Blue Mountain from Gryphon Gold Corp in order to protect access to the geothermal resources. Additionally, NGP hired GeothermEx to conduct reservoir modeling and evaluate its power production potential over the long term. Early results showed that Faulkner 1 should be initially operated at 70% capacity to assure a sustainable operation. A preliminary conceptual model of the Blue Mountain area is presented in Casteel et al. (2009). The Blue Mountain area is located at T36N, R34E in south-central Humboldt County, Nevada, 25 miles west of Winnemucca (Blue Mountain Geothermal Project, Nevada Geothermal Power, Inc., website: http://www.nevadageothermal.com/s/Home.asp).

EDWARDS CREEK AREA, CHURCHILL COUNTY

The Edwards Creek project encompasses 4,160 acres (1683.495 hectares) along 15.4497 ft (9.6 km) of the Clan Alpine Mountains range-front fault. Areas of hydrothermal alteration occur along the fault, and boiling water was encountered at shallow depths by 23 exploration holes drilled by previous operators. Cation and silica geothermometer temperatures from well waters suggest an approximately 175°C (~347°F) reservoir. The Great Basin Center for Geothermal Energy identified a shallow (2m) thermal anomaly that is coincident with the location of the hot wells. Standard Steam Trust (SST) has completed a detailed gravity survey which shows a ~60^{o} southeast dip to the range-front fault, which would place the reservoir at feasible depths beneath SST's leaseholds. SST intends to drill a slim hole in 2010 to ascertain temperature and flow within the reservoir as part of a ~$1 million exploration program.

Another project in southwest Edwards Creek encompasses 7,617 acres (3082.495 hectare) covering 8.078 miles (13 kilometers) of the Clan Alpine Mountains range-front fault. The 2008 gravity survey identified the location of the Clan Alpine fault as well as a sub-parallel fault that lies basinward of the range-front fault. This sub-parallel fault may be the more significant of the two faults, and is believed to be the fault associated with high-temperature ground water encountered by shallow exploration drilling at Edwards Creek in 2005 and 2006.

EIGHT MILE FLAT (SALT WELLS), CHURCHILL COUNTY

In April 2009 **Enel North America, Inc.,** a subsidiary of **Enel S.p.A., Italy**, inaugurated its 18 MW gross-capacity binary geothermal power plant at Salt Wells and its new 47.3 MW gross-capacity Stillwater binary plant. The Nevada Division of Minerals issued a geothermal project area permit (#698PA) to Enel Salt Wells, LLC to drill up to eight production wells with estimated depths of 1,000 feet (304.8 meters), eight injection wells with estimated depths of 3,000 feet (914.4 meters), and 10 observation wells. The project area is located in Sections 23, 24, 25, 26, 35, and 36 of Township 17 North, Range 30 East. A transmission line to the site of the power plant near Salt Wells was completed (Great Basin Center for Geothermal Energy, Current Geothermal Exploration Activity: http://www.unr.edu/geothermal/explactivity.htm and Enel North America, Inc.: http://www.enel.it/northAmerica/). On September 25, 2009, it was announced that Enel had been awarded $61,520,872 in funds through the American Recovery and Reinvestment Act's "1603 Program" for its Salt Wells and Stillwater projects. According to the Economic

Development Authority of Western Nevada (EDAWN), the Salt Wells (along with the new Stillwater) project will generate over $4 million dollars and will create 25 permanent jobs for the next thirty years. The two plants combined have a total gross generating capacity of 65 MW. Both plants are binary cycle plants that operate at temperatures between 130-150°C (266-302°F) (http://www.usnews.com/science/articles/2009/04/16/two-nv-geothermal-plants-open-others-explored.html). In an April, 2009 Enel press release, they state that the two plants "have a total gross installed capacity of 65 MW, which will generate over 400 million kWh of electricity a year, enough to meet the needs of some 40,000 US households and avoid the emission of over 331 thousand tons of CO_2" (http://www.enel.com/en-GB/media/press_releases/release.aspx?iddoc=1608017).

Other projects in the Salt Wells area include projects by Vulcan and Ormat. Vulcan (now Gradient Resources) plans to construct up to six geothermal power plants and related facilities. Ormat plans to develop one geothermal power plant. Additionally, NV Energy plans to construct above-ground transmission lines, electrical substations and switching facilities. Because the projects proposed by the three companies are occurring nearly simultaneously in the same area and with similar potential impacts, the BLM is conducting one EIS for the three projects simultaneously. A notice of intent was published September 11, 2009, and the target release date of the Draft EIS for Salt Wells is now December 2010 (http://www.blm.gov/nv/st/en/fo/carson_city_field/blm_information/nepa/salt_wells_energy.html).

HAZEN (PATUA), CHURCHILL COUNTY

Several exploration drill rigs were observed on ground controlled by Vulcan Power Company (now Gradient Resources) in 2009. Vulcan has drilled seven production wells and eight observation wells at Patua so far. On February 11, 2010, Vulcan announced plans to begin construction of a 60 MW power plant immediately, with plant completion expected in 2012. The project is located about 38 miles (about 61 kilometers) east of Reno, 10 miles (16.1 kilometers) east of Fernley. Vulcan has been conducting an extensive exploration program including well drilling and core drilling, geological, geochemical and geophysical surveys and well discharge testing. Thirteen hot springs occur in the project area that range in temperature from 27.78 to 95.56°C (82 to 204ºF). In 1962, Magma Power drilled three wells from 300 to 750 ft (91 to 230 m), recoding a maximum temperature of 132.22°C (270ºF) (http://www.vulcanpower.com/Pages/Patua.html).

JERSEY VALLEY, PERSHING COUNTY

The Jersey Valley geothermal area is located at the base of the western flank of the Fish Creek Range in Pershing County. Ormat Nevada Inc. began drilling in this area in 2007, encountering valley fill and metasediments of the Fish Creek Range. A 20-year power purchase agreement (PPA) between Ormat Technologies Inc. and NV Energy was established. Construction of a 30 to 35 MW nameplate-capacity generation facility is expected to begin in mid 2010, with initial power generation of approximately 15 to 18 MW beginning in late 2010.

McGINNESS HILLS, LANDER COUNTY

Surface sinter is exposed in this former gold exploration property in Lander County. Drilling encountered hot water with high geothermometer temperatures. Subsequent work led to a November 2009 announcement of a 20-year power purchase agreement (PPA) between Ormat Technologies, Inc. and NV Energy to furnish 51 MW (NV Energy, 2010) from the McGinness Hills geothermal project, which is currently under construction.

MOANA, WASHOE COUNTY

The Peppermill Resort Casino is located within the Moana geothermal area and is the only hotel in the country that uses geothermal energy for heating. The resort drilled a new 4,400 ft (1,340 m) deep well that produces 170^0F (77^0C) water at 1,200 gallons per minute. With this new well and a complete overhaul of the existing geothermal system, the resort invested $9.7 million to offset their use of natural gas for heating. The Peppermill is harnessing the geothermal energy, which now heats 100% of the resort's domestic water and is heating the entire 2.1-million-square-foot facility 24 hours per day. The conversion to geothermal heating is expected to save the resort millions of dollars by offsetting natural gas use.

REESE RIVER, LANDER COUNTY

Exploration to date at the 6,145 acre (2487 hectare) Reese River project includes a total of 57 wells ranging in depth from 328 to 5000 feet (100 to 1524 meters) with recorded temperatures up to 150ºC (302°F). Temperature data indicate a large thermal anomaly approximately 6.2 mi (10 km) long by approximately 1.9 mi (3 km) wide. Temperature gradients measured in this area reach a maximum of approximately 500°C/km. Geophysical

surveys completed include seismic, gravity, magnetotelluric, and radiometric surveys. Geological and structural mapping has been completed and geochemical analyses were undertaken on soil, water, rock and vegetation. In November 2009, Sierra Geothermal Power completed a program of 10 shallow exploration holes totaling 7021 feet (2,140 meters), with the results suggesting that the size of the thermal anomaly is greater than previously thought.

SAN EMIDIO AND GRANITE CREEK GEOTHERMAL AREAS, WASHOE COUNTY

U.S. Geothermal, Inc. announced the completion of a transaction with Michael Stewart and **Empire Geothermal Power** to acquire the Empire geothermal power plant and 28,358 acres of geothermal leases and ground water rights in May 2008. The total purchase price for the power plant and acreage was $16.62 million. The transaction included assets from two locations, San Emidio and Granite Creek. San Emidio includes the Empire power plant and approximately 22,944 acres (9285 hectares) of leases and ground-water rights and a mothballed dehydration facility located adjacent to the site. The Granite Creek assets are 5,414 acres (2191 hectares) of BLM leases about 6 miles (9.7 kilometers) north of Gerlach, Nevada. U.S. Geothermal plans to develop a 35-megawatt power project for the San Emidio resource. Drilling commenced on a new production well intended to expand the resource for development of the new power plant. This $75- to $85-million-plan calls for the construction of twin binary-cycle plants. It is anticipated that the current well field could provide approximately 75% of the geothermal fluid requirement for one of the binary plants, and an expanded production and injection well field could be drilled to provide the balance of the needed geothermal fluid for the second plant to make, in total, a 27-megawatt development (U.S. Geothermal, Inc. http://www.usgeothermal.com and Nevada Geothermal Update, Nevada Division of Minerals, May 2008). This development will be conducted in two stages: repower and expansion. During the first stage, the existing 3.6 MW plant is being replaced with a new, more efficient 9- to 10-MW power plant that will utilize the existing, proven geothermal reservoir and be on-line in late 2011. The second stage requires drilling new production wells and the construction of an upgraded transmission line to allow for increased power production. This expansion is expected to produce an additional 26 MW and be on line by the third quarter of 2012 (http://www.usgeothermal.com/NewsReleases/December-8-2009.pdf).

SILVER PEAK, ESMERALDA COUNTY

Sierra Geothermal Power's (SGP) Silver Peak project (7,873 acres/3186 hectares in Esmeralda County, Nevada) was first explored in the 1980s by Phillips Petroleum Company who drilled six temperature gradient wells in the area. Exploration resumed in 2005 with two more gradient holes drilled by the property vendor and ten shallow thermal gradient (TG) holes drilled by SGP in November, 2009. Geothermal features visible on the property include geothermal vents, travertine-manganese-silica sinter deposits, fossilized algal mats and complex faulting. Shallow wells with temperatures of up to 88°C (109.4°F) have geothermometry indicating reservoir temperatures up to 227°C (440.6°F) and temperature gradients exceeded 500°C/km. SGP also completed detailed MT and airborne Z-tipper Electromagnetic (ZTEM) surveys at Silver Peak. During 2010 SGP intends to complete power purchase agreements, related transmission studies, additional geophysics, 300-meters-deep TG drilling, and (1-2-kilometer-deep) core holes, slim holes, and 13-inch diameter production assessment wells. SGP was awarded a $5 million DOE grant. Funds are to be used for drilling and exploration activities on the project, on a 50:50 cost-share basis.

SODA LAKE, CHURCHILL COUNTY

In 2009, Magma acquired additional leases adjacent to their Soda Lake property and completed two drill holes to depths of 4,468 feet (1361.8 meters) and 8,995 (2741.7 meters) feet to determine the distribution of permeability and heat in hope of doubling the plant's gross generating capacity from 11 to 23 MW. Maximum temperatures attained in these two wells were 201.67 and 207.22°C (395 and 405ºF) (http://www.magmaenergycorp.com).

STEAMBOAT HOT SPRINGS, WASHOE COUNTY

The Galena No. 3 plant, Ormat's newest binary geothermal power plant at Steamboat Hot Springs, is now online. The addition of this new plant brings the gross power production from the Steamboat Hot Springs area up to approximately 100 MW. Sierra Pacific Power Co., Sierra Pacific Resources northern Nevada utility (now NV Energy), and ORNI 14 LLC, a subsidiary of ORMAT Nevada, Inc., signed a 20-year 20-MW power purchase agreement (PPA) for the Galena No. 3 project. SB Geo, Inc. and Ormat started decommissioning the original 7.4 MW Steamboat I power plant, which was brought on line in 1986. At present, there are no new power plants planned for the Steamboat geothermal area (Nevada Division of Minerals, 2009).

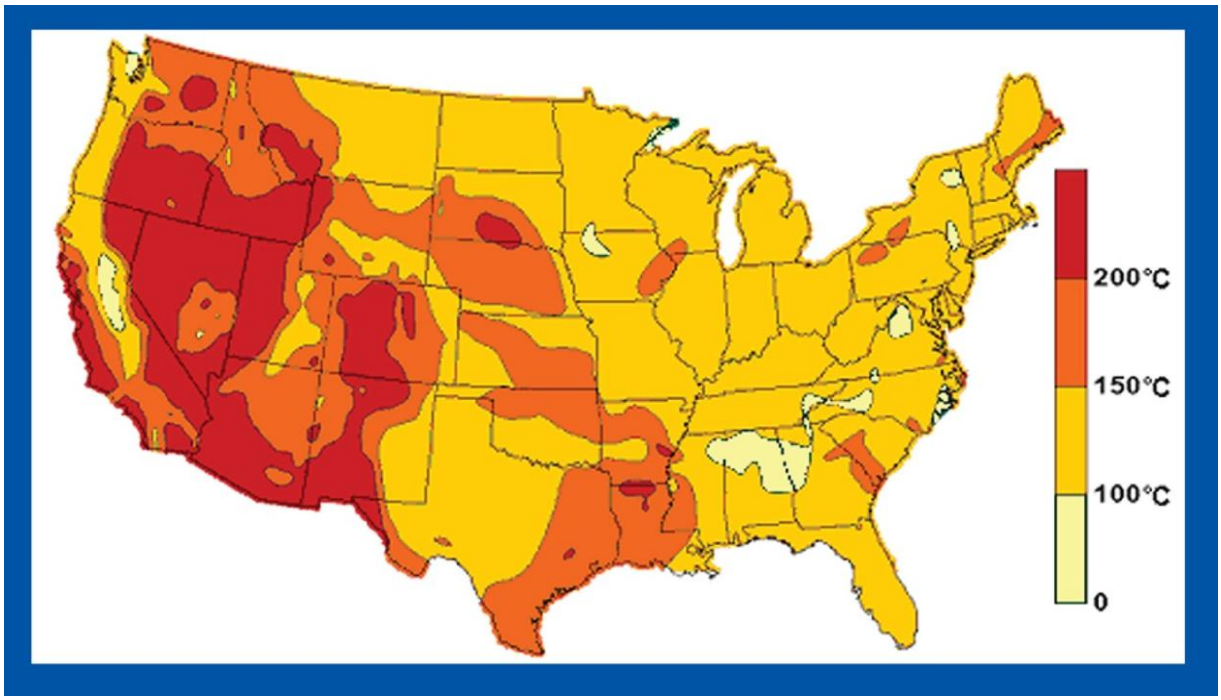

Figure 6. Geothermal resources map of the United States (2007) showing the estimated subterranean temperatures at a depth of 6 kilometers. To estimate the Earth's internal temperature at any depth below the capabilities of normal well drilling, multiple data sets are synthesized. The data used for this figure are: thermal conductivity, thickness of sedimentary rock, geothermal gradient, heat flow, and surface temperature (U.S. Department of Energy - Energy Efficiency and Renewable Energy Geothermal Technologies Program, original author SMU Geothermal Lab 2007, http://smu.edu/geothermal/).

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NV Energy, 2010, NV Energy Portfolio Standard Annual Report; Compliance Year 2009, Table 18, April 1, 2010 (available on the Public Utilities Commission of Nevada website), p. 72.

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Geothermal Bibliography and Web Links to Other Geothermal Information

For further information on geothermal resources in Nevada check the following Websites or contact Ron Hess at 775-784-6692 or via e-mail at rhess@unr.edu:

Map of Geothermal Resources in Nevada (second edition), NBMG Map 141, available online in PDF-file format: http://www.nbmg.unr.edu/dox/m1412.pdf .

Nevada Bureau of Mines and Geology Geothermal Resources of Nevada Website at http://www.nbmg.unr.edu/geothermal/gthome.htm .

Nevada Commission on Minerals, Nevada Division of Minerals at http://minerals.state.nv.us/ .

Great Basin Center for Geothermal Energy http://www.unr.edu/geothermal/. This site contains geothermal exploration data, interactive maps, lease and incentive program information, and numerous geothermal digital data sets.

GEO-HEAT CENTER, at http://geoheat.oit.edu/, Oregon Institute of Technology, Klamath Falls, Oregon. This site focuses on direct use applications of geothermal energy.

DOE/INEEL Geothermal Resource Location Maps for 13 Western States in PDF, JPG, and e00 file formats at http://geothermal.id.doe.gov/maps/index.shtml .

The Nevada Geothermal Resources map in PDFfile format is found at http://geothermal.id.doe.gov/maps/nv.pdf .

The Renewable Resource Data Center (RReDC) provides access to an extensive collection of renewable energy resource data, maps, and tools. Geothermal, biomass, solar, and wind resource data for locations throughout the United States on the RReDC site at http://www.nrel.gov/rredc/.

Southern Methodist University Geothermal Lab, specializing in geothermal gradient data and maps of the entire country, post information at http://www.smu.edu/geothermal/.

Summary of Supporting Data for USGS Regional Heat-flow Studies of the Great Basin, 1970-1990, by John H. Sass, Susan S. Priest, Arthur H. Lachenbruch, S. Peter Galanis, Jr., Thomas H. Moses, Jr., John P. Kennelly, Jr., Robert J. Munroe, Eugene P. Smith, Frederick V. Grubb, Robert H. Husk, Jr., and Charles W. Mase; USGS Open-File Report 2005-1207 online version 1.0 on the Web at http://pubs.usgs.gov/of/2005/1207/.

Geothermal Industry Temperature Profiles from the Great Basin, by John H. Sass, Susan S. Priest, Arnold J. Blanton, Penelope C. Sackett, Stephanie L. Welch, and Mark A. Walters; USGS Open-File Report 99-425 online version 1.0 on the Web at http://pubs.usgs.gov/of/1999/of99-425/webmaps/home.html .

The Bureau of Land Management Land and Mineral Records-LR2000 system Web address is http://www.blm.gov/lr2000/ .

GeoCommunicator is the publication site for the Bureau of Land Management's National Integrated Land System (NILS). GeoCommunicator provides searching, accessing and dynamic mapping of data for federal land stewardship, land and mineral use records, and land survey information. GeoCommunicator provides spatial display for land and mineral cases from BLM's LR2000 system. The Web address for the GeoCommunicator is http://www.geocommunicator.gov/.

The U.S. Department of Energy (DOE) Geothermal Technologies Program and the DOE Office of

Scientific and Technical Information (OSTI) have scanned approximately 3,300 agency and national lab technical reports. These files are in a PDF, full-text-searchable format and accessible online at http://www.osti.gov/energycitations/ .

Oil and Gas

by David A. Davis

PRODUCTION

According to the Nevada Division of Minerals, Nevada's oil production in 2009 was 454,593 barrels (0.023% of total U.S. production), which was up 4% from 2008 and the highest since 2004. 2008 saw the first increase since 1992. Production came from 65 actively producing wells in nine fields in Railroad Valley, Nye County, which accounted for 83% of the state's production, and six wells in one field in Pine Valley, Eureka County, which accounted for 17%. One other minor field was shut in throughout 2009 and four other minor fields are plugged and abandoned. Nevada ranked 26 out of the 31 oil-producing states in the country in 2009 (http://www.eia.doe.gov). According to the Division of Minerals, the average per-barrel-net-wellhead-price for Nevada crude oil was $45.45, which was a decrease of 40% from $76.38 in 2008. The sales volume (or gross yield) decreased 41% to $19,570,860 in 2009 from $33,322,379 in 2008. The figure used in the summary table in the Overview section of this report ($21.8 million) is the gross proceeds reported by the Nevada Department of Taxation.

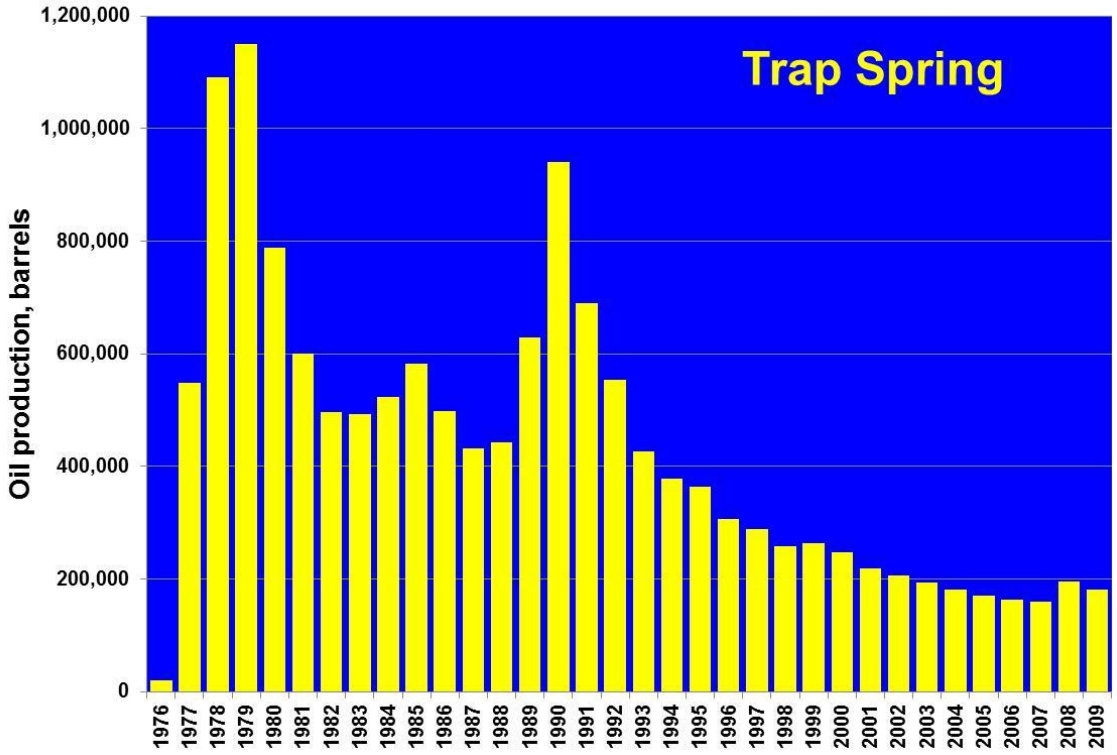
The production of Nevada's 71 actively producing wells ranged between 2 and 106 barrels of oil per day and between 0 and 2,870 barrels of water per day. They averaged 20 barrels of oil per day and 256 barrels of water per day. Thirty wells were strippers, and 22 produced more than 20 barrels of oil per day. Twenty-seven wells produced less than 50 barrels of water per day, and 11 produced more than 500 barrels of water per day.

Ninety-five wells in 12 fields were listed as producers in 2009. Of these, 23 were shut in for the entire year. At year's end, eight wells had been shut in for less than 6 months, and one well had been shut in for more than 6 but less than 12 months. Two wells had been shut in since 2008, four wells had been shut in since between 2002 and 2006, and the rest had been shut in since between 1986 and 1998.

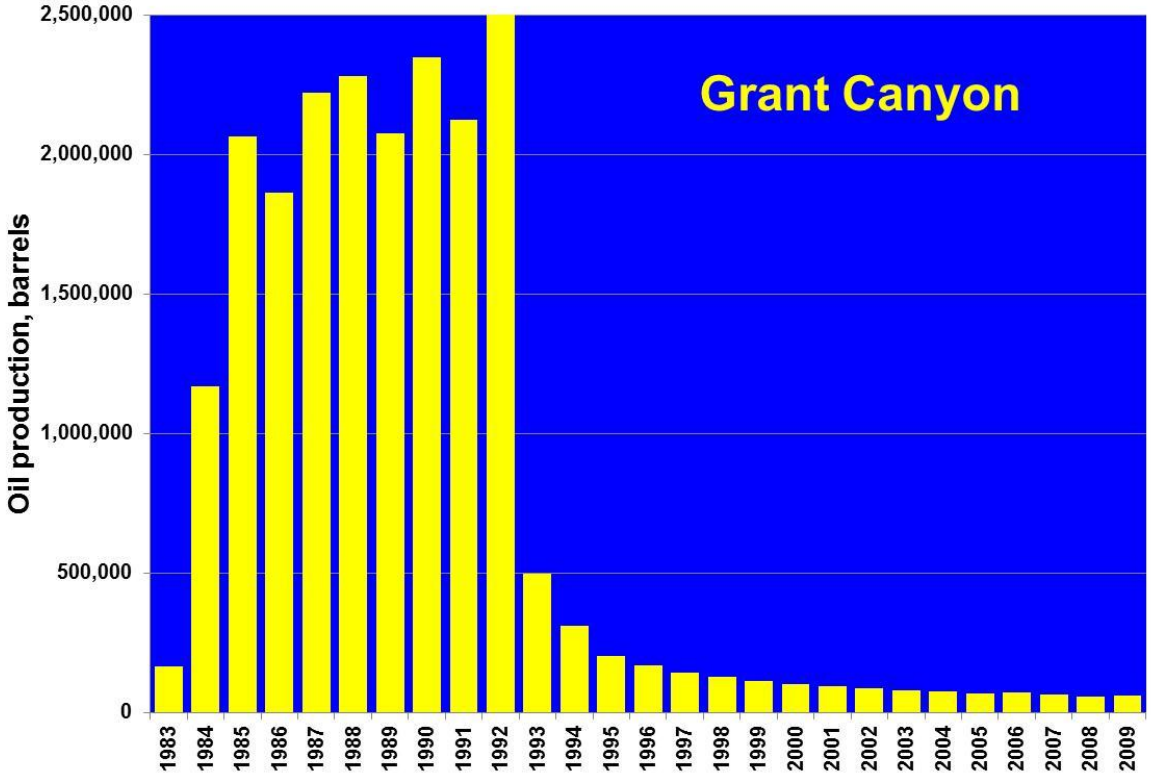
Grant Canyon No. 9, which had been Nevada's highest ranking producer between 1996 and 2007 and dropped to fourth place in 2008, was once again Nevada's highest volume producer. It averaged 106 barrels of oil and 806 barrels of water per day. Nevada's second highest volume producer was Munson Ranch 12-43, which averaged 104.4 barrels of oil and 1 barrel of water per day and had been the highest volume producer in 2008. This was slightly more than Nevada's third highest volume

producer, Blackburn No. 14, which averaged 103.7 barrels of oil and 17 barrels of water per day.

The Trap Spring Field, which produces from the Oligocene Tuff of Pritchards Station between about 3,210-4,950 feet, averaged 497 barrels of oil and 6,323 barrels of water per day in 2009 and accounted for 40% of Nevada's total oil production. Oil and water production decreased 8%, and 2% respectively. Oil production decreased in 24 active producers, increased in nine. One well was shut in for seven months and another for 2 months. Of the seven inactive producers, one has been shut in since 1999, one since 1998, two since 1996, one since 1992, one since 1991, and one since 1986.

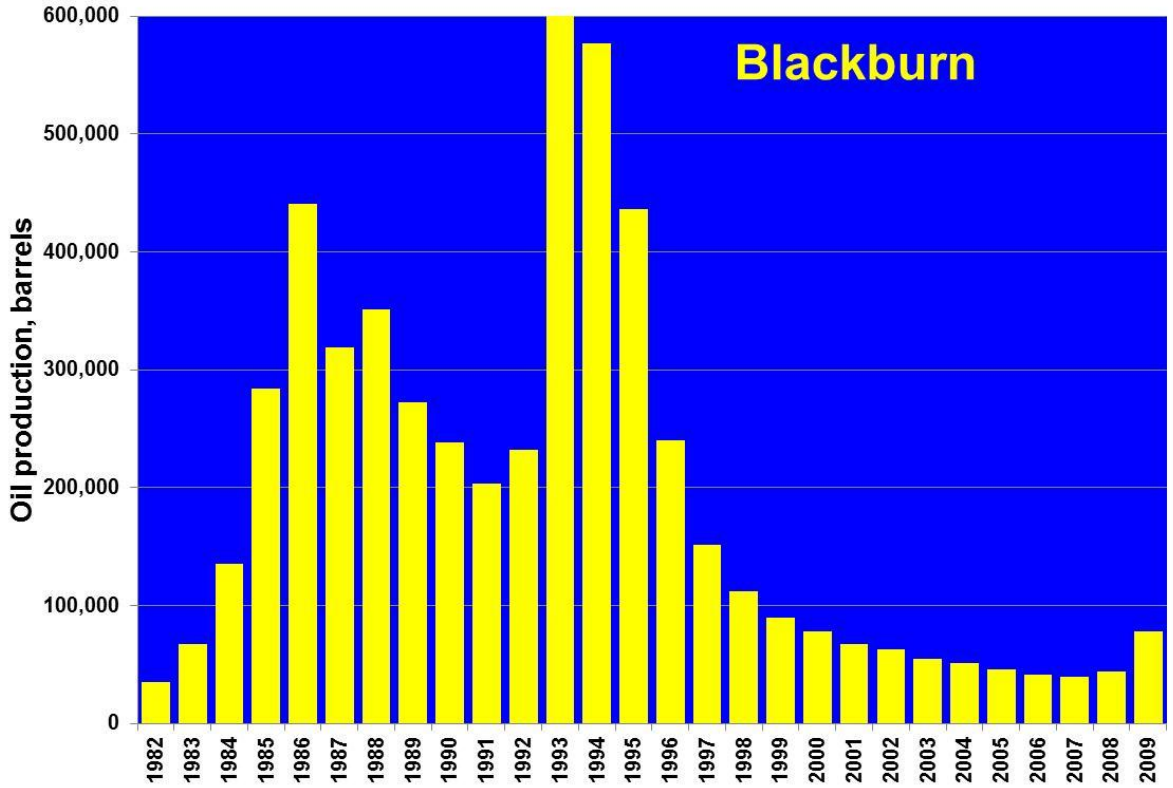


The Grant Canyon Field, which produces from the Devonian Guilmette Formation between about 2,160-4,300 feet, averaged about 164 barrels of oil and about 1,711 barrels of water per day in 2009 and accounted for about 13% of Nevada's total oil production. Oil production increased 7%, and water production decreased 2%. Daily per-well oil production ranged between 23 and 104 barrels and averaged 55 barrels. Daily per-well water production ranged between 49 and 901 barrels and averaged 570 barrels. Oil production increased in one producer and decreased in two producers. The one inactive producer has been shut in since 1992.



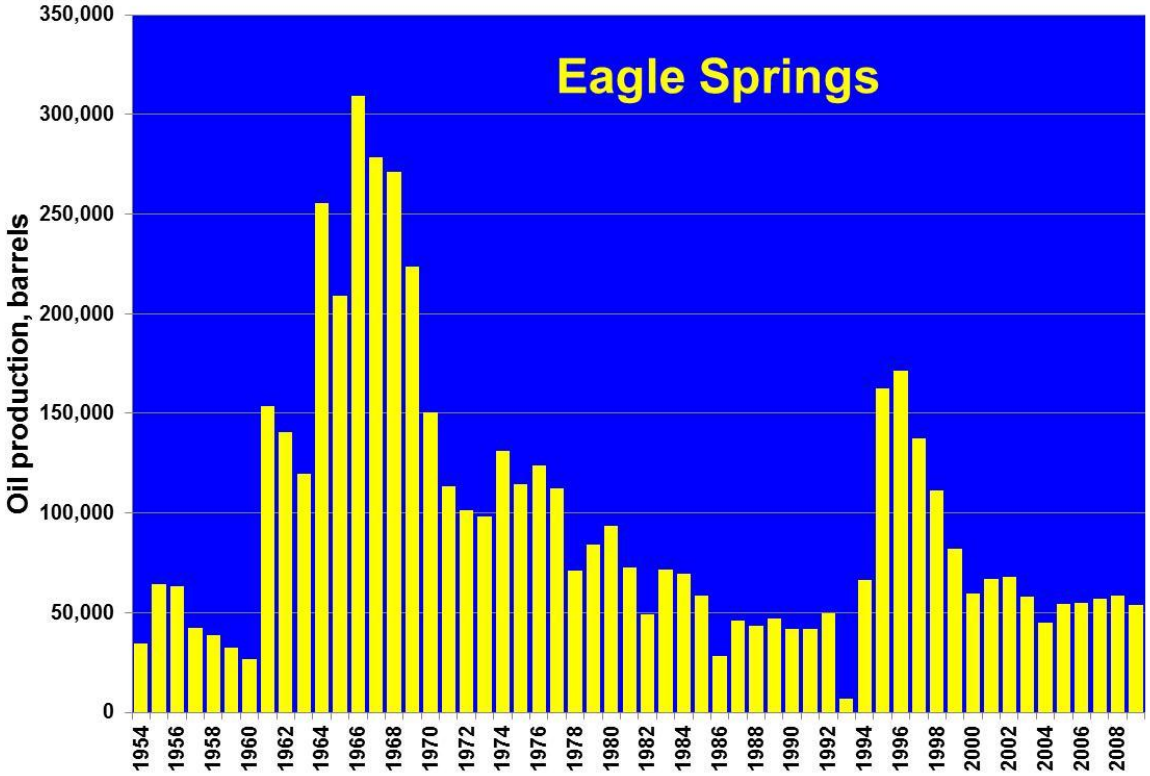
The Bacon Flat Field, which produces from the Devonian Guilmette Formation (carbonate) between about 4,960-5,350 feet, averaged 21 barrels of oil and 92 barrels of water per day in 2009 and accounted for about 2% of Nevada's total oil production. Oil production decreased 2% and water production increased 217%. Only one of its three producers was active. One well has been shut in since 1993 and the other since 1988.

The Blackburn Field, which produces from the Oligocene Indian Well Formation (tuff and tuffaceous sandstone), Mississippian Chainman Shale (sandstone), and Devonian Nevada Formation (carbonate) between about 6,700-6,750 feet, averaged 213 barrels of oil and 4,257 barrels of water per day in 2009 and accounted for about 17% of Nevada's total oil production. Oil production increased 79% and water production increased 2%. Of the six active producers, oil production increased in two and decreased in four. Daily per-well oil production ranged between 3 and 104 barrels and averaged 36 barrels. Daily per-well water production ranged between 17 and 1806 barrels and averaged 710 barrels. The one inactive producer, except for a brief production period in November 2005, has been shut in since 1998.



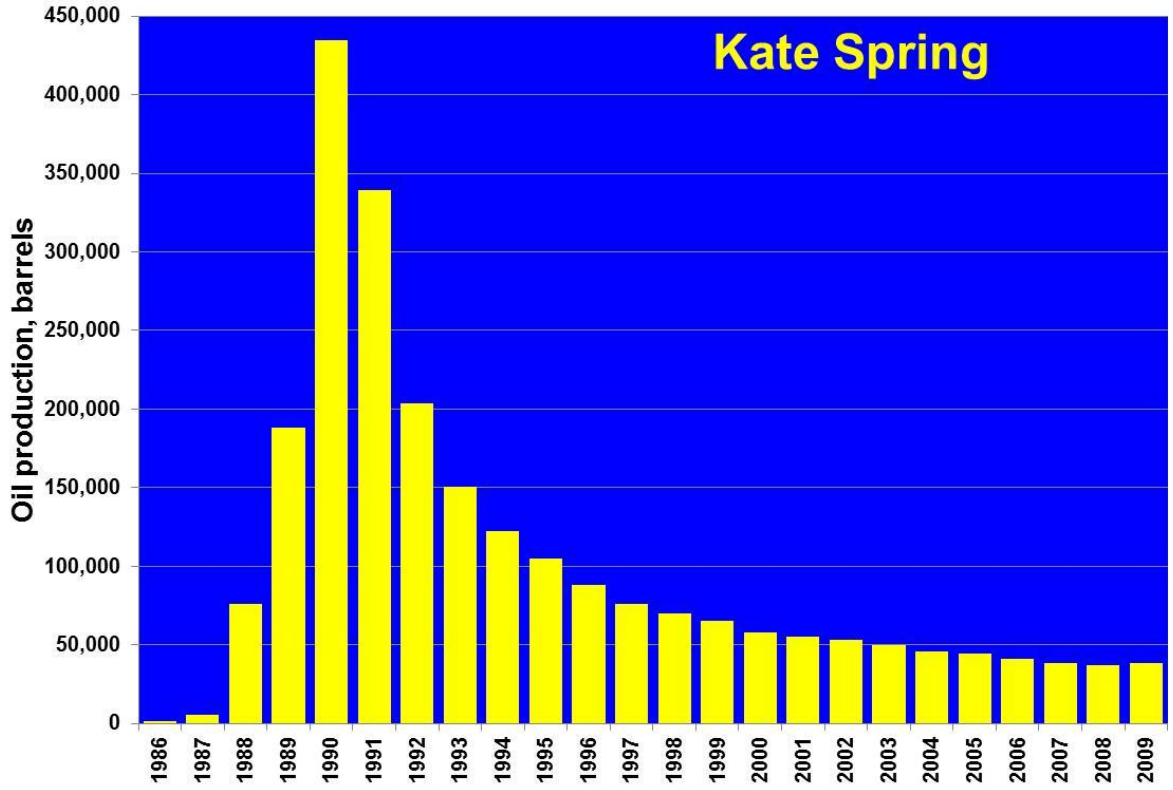
The Eagle Springs Field, which produces from Oligocene ignimbrites, the Eocene Sheep Pass Formation (lacustrine carbonates), and the Pennsylvanian Ely Limestone between about 5,780-7,360 feet, averaged 148 barrels of oil and 1918 barrels of water per day in 2009 and accounted for 12% of Nevada's total oil production. Oil and water decreased 8% and 17% respectively. Daily per-well oil production ranged between 5 and 24 barrels and averaged 10 barrels. Daily per-well water production ranged between 6 and 586 barrels and averaged 128 barrels. Of the 15 active producers, oil production increased in four and decreased in 11. One producer was shut in for five months. Of the six inactive producers, one was shut in last year, one has been shut in since 2004, three have been shut in since 1997, and one since 1986.

The Ghost Ranch Field, which produces from the Devonian Guilmette Formation between about 4,350-4,620 feet, averaged 62 barrels of oil and 1360 barrels of water per day in 2009 and accounted for a little more than 5% of Nevada's total oil production. Oil production increased 2% and water production decreased 30%. Daily per-well oil production ranged between 6 and 40 barrels and averaged 16 barrels. Daily per-well water production ranged between 271 and 506 barrels and averaged 341 barrels. Oil production increased in one producer and decreased in three producers.



The Kate Spring Field, which produces from the Tertiary Horse Camp Formation (breccia) and the Devonian Guilmette Formation between about 4,450-4,820 feet, averaged 105 barrels of oil and 1,425 barrels of water per day in 2008 and accounted for 8% of Nevada's total oil production. Oil and water production increased 4%, and 25% respectively. Daily per-well oil production ranged between 12 and 57 barrels and averaged 26 barrels. Daily per-well water production ranged between 156 and 564 barrels and averaged 356 barrels. Oil production increased in three active producers and decreased in one. Of the two inactive producers, one has been shut in since 1997 and the other since 1993. A total of 3,947 thousand cubic feet of gas was produced from the Kate Spring Field in 2009, a decrease of 13% from 2008. The gas is used to operate production and related equipment at the lease sites of Makoil, Inc., and Western General, Inc.

The Sand Dune Field's only producer, which produces from Permian and Pennsylvanian limestones between about 5,970-6,200 feet, averaged 27 barrels of oil and 82 barrels of water per day in 2009 and accounted for 2% of Nevada's total oil production. Oil and water production decreased 7% and 9% respectively.



The Sans Spring Field's only active producer, which produces from the Oligocene Garrett Ranch Group (volcaniclastic rocks and ignimbrites) between about 5,640-5,770 feet, averaged 14 barrels of oil and no water per day for 104 days of production in 2009 and accounted for 0.3% of Nevada's total oil production. Oil and water production decreased 41% and 100% respectively. Of the two inactive producers, one has been shut in since 1998 and the other has been temporarily abandoned since 1993.

Two minor fields produced 231 barrels of oil in 2009. The Currant Field's only production well produced from the Eocene Sheep Pass Formation between about 6,850-7,080 feet. Its oil production increased 3% in 2009, and it produced no water. Oil and water production from the Duckwater Creek Field's only producer, which produces from the Oligocene Garrett Ranch Group between about 5,680-5,830 feet, both remained the same.

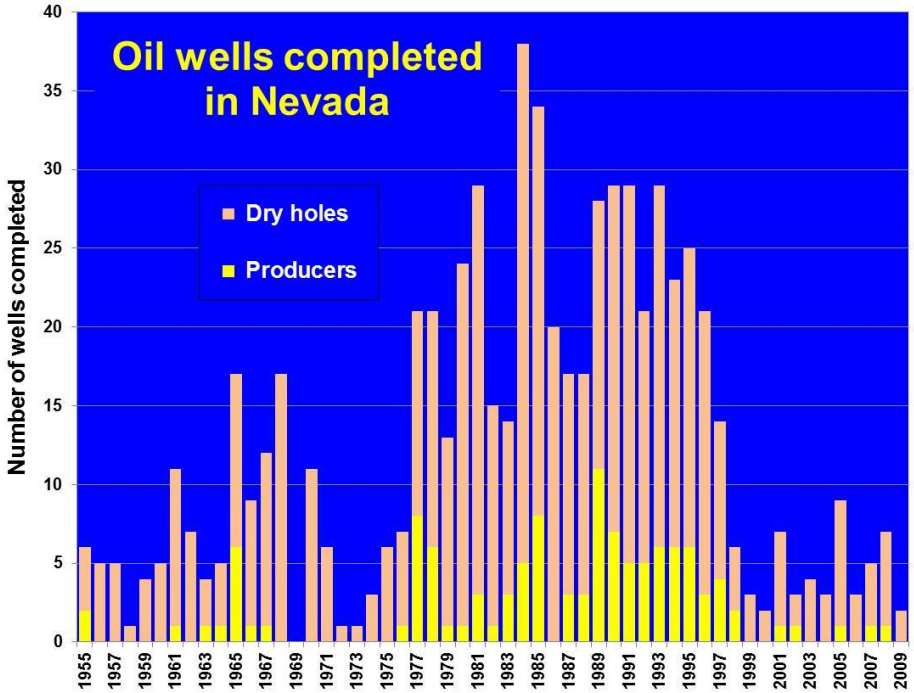
Five other minor fields recorded no production for 2009. The North Willow Creek Field, which produced from the Mississippian Chainman Shale between about 6,290-6,470 feet, was shut in throughout 2009. One producer was shut in March 2008 and the other has been shut in since 2002. The Three Bar Field's three production wells, which produced from the Miocene Humboldt Formation (sandstone and volcanic rock), the

Oligocene Indian Well Formation, and the Cretaceous Newark Formation (sandstone and carbonate) between about 5,720-7,070 feet were plugged and abandoned since 2000 and 2001. The Tomera Ranch Field's two production wells, which had produced from the Oligocene Indian Well Formation (chert and tuffaceous sandstone) between about 1,150-1,950 feet, were plugged and abandoned in 2007. Deadman Creek's only production well, which produced briefly from the Miocene Humboldt Formation between 8,165-8,850 feet, was plugged and abandoned in 1998. Toano Draw's only production well, which produced from the Miocene Humboldt Formation, was plugged and abandoned in October 2008.

Most Nevada oil is used to make such products as No. 1 and No. 2 diesel fuel, kerosene, stove oil, and asphalt. Foreland Refining Corporation owns the two refineries in Nevada. Nevada crude oil was transported in batches by trucks to the 8,000-barrel-per-day capacity refinery near Currant in Railroad Valley in 2009. The refinery and asphalt storage facility at Tonopah has not been in operation since 2002 and will likely not be in operation again. In 2009, several tanks were being used for diesel and gasoline storage, and the towers were still standing, but the facility is slowly being dismantled.

NEW PRODUCERS

No new producers were completed in 2009.



Production from Nevada's oil fields (barrels of oil)

Compiled from producers' reports filed with the Nevada Division of Minerals

Field (year discovered)	1954-2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Eagle Springs (1954) (Railroad Valley)	4,871,135	67,024	67,908	57,946	45,176	54,362	54,708	56,992	58,683	53,851	5,387,785
Trap Springs (1976) (Railroad Valley)	12,619,409	218,198	206,424	193,191	181,937	170,896	163,299	159,821	196,089	181,320	14,290,584
Currant (1979) (Railroad Valley)	1,434	33	21	23	9	3	0	81	108	111	1,823
Bacon Flat (1981) (Railroad Valley)	932,921	13,898	12,647	11,763	10,612	7,556	8,112	8,301	7,968	7,764	1,021,542
Blackburn (1982) (Pine Valley)	4,861,800	66,899	62,412	54,623	51,372	45,369	41,491	39,477	43,600	77,730	5,344,773
Grant Canyon (1983) (Railroad Valley)	20,478,895	92,899	85,722	79,293	73,879	68,944	70,158	62,236	56,247	60,036	21,128,309
Kate Spring (1986) (Railroad Valley)	1,967,201	55,198	53,408	49,698	45,656	44,288	41,124	38,411	36,863	38,347	2,370,194
Tomera Ranch (1987) (Pine Valley)	22,466	0	11,901	1,981	124	0	0	0	0	0	36,472
North Willow Creek (1988) (Pine Valley)	44,470	144	573	349	377	2,064	2,552	1,256	56	0	51,841
Three Bar (1990) (Pine Valley)	23,837	0	0	0	0	0	0	0	0	0	23,837
Duckwater Creek (1990) (Railroad Valley)	15,530	968	869	436	200	185	122	150	120	120	18,700
Sans Spring (1993) (Railroad Valley)	238,036	6,356	5,532	4,775	4,169	3,324	3,265	2,971	2,407	1,419	272,254
Ghost Ranch (1996) (Railroad Valley)	303,354	36,173	31,814	26,129	36,423	37,874	30,255	26,070	23,615	24,011	575,718
Deadman Creek (1996) (Elko County)	367	0	0	0	0	0	0	0	0	0	367
Sand Dune (1998) (Railroad Valley)	40,211	13,461	14,211	13,123	13,124	11,878	10,618	10,562	10,467	9,883	147,538
Toano Draw (2007) (Elko County)								1,916	48	0	1,964
Total	46,421,066	571,251	553,442	493,330	463,058	446,743	425,704	408,244	436,271	454,592	50,673,701
Change from previous year		-8%	-3%	-11%	-6%	-4%	-5%	-4%	7%	4%	

Oil rig in the Pinon Range

Production of water from Nevada's oil fields (barrels of water)

Compiled from producers' reports filed with the Nevada Division of Minerals

Field (year discovered)	1994-2002	2003	2004	2005	2006	2007	2008	2009	Total
Eagle Springs (1954)	3,295,862	538,814	357,021	428,375	501,462	804,428	842,435	699,950	7,468,347
Trap Spring (1976)	24,653,490	1,802,383	1,727,583	2,427,226	2,298,300	2,371,513	2,356,016	2,307,911	39,944,422
Currant (1979)	0	0	0	0	0	0	0	0	0
Bacon Flat (1981)	711,528	5,080	3,479	4,694	4,899	2,153	10,204	33,664	775,701
Blackburn (1982)	17,204,747	1,805,820	10,728,237	1,840,581	1,537,556	1,582,937	1,558,039	1,588,194	37,846,111
Grant Canyon (1983)	3,093,616	425,905	438,911	391,017	506,854	442,826	638,822	624,493	6,562,444
Kate Spring (1986)	4,544,577	451,878	417,030	424,809	416,752	437,983	416,983	520,099	7,630,111
Tomera Ranch (1987)	305,732	169,487	23,393	0	0	0	0	0	498,612
N. Willow Creek (1988)	2,710	52	97	268	83	0	0	0	3,210
Three Bar (1990)	5,958	0	0	0	0	0	0	0	5,958
Duckwater Creek (1990)	60,444	2,503	1,013	1,410	855	1,350	1,080	1,080	69,735
Sans Spring (1993)	2,607,513	290,961	317,230	238,854	261,500	244,756	217,288	0	4,178,102
Ghost Ranch (1996)	1,030,113	123,897	254,781	569,511	641,022	690,599	711,865	496,553	4,518,341
Deadman Creek (1996)	0	0	0	0	0	0	0	0	0
Sand Dune (1998)	176,250	32,624	30,807	31,935	27,043	31,044	32,684	29,998	392,385
Toano Draw (2007)						25,614	3,507	0	29,121
Total	57,692,540	5,649,404	14,299,582	6,358,680	6,196,326	6,635,203	6,788,923	6,301,942	109,922,600
Change from previous year		-5%	153%	-56%	-3%	7%	2%	-7%	

Pump jack in Pine Valley

Status of Nevada oil and gas production wells in 2009

This table gives the amount of oil and water produced and the number of production days in 2009. The sources of information include well records and statistics from the Nevada Division of Minerals.
Status abbreviations with dates of the action where applicable: BBL-barrels; MCF-thousand cubic feet; N/A-not available; PA-plugged and abandoned; Prod-production; SI-shut-in; WD-water disposal

FIELD/OPERATOR/WELL	NEVADA PERMIT	DATE COMPLETED	STATUS	LOCATION	PRODUCTION OIL (BBL)	PRODUCTION WATER (BBL)	PRODUCTION GAS (MCF)	PRODUCTION DAYS
EAGLE SPRINGS (Nye Co., 1954)								
Berry Petroleum Co.								
Eagle Springs Federal No. 44-35	813	05/98	SI 2004	SE/4, NW/4, S35, T9N, R57E	0	0		0
Eagle Springs Federal No. 54-35	726	10/94	Prod	SW/4, NE/4, S35, T9N, R57E	5,442	21,131		365
Eagle Springs Unit No. 1-34	107	07/67	SI 1986	SE/4, NE/4, S34, T9N, R57E	0	0		0
Eagle Springs Unit No. 1-35	4	05/54	WD 1978	NE/4, NW/4, S35, T9N, R57E				
Eagle Springs Unit No. 1-36	76	02/65	SI 2008	SW/4, NE/4, S36, T9N, R57E	0	0		0
Eagle Springs Unit No. 2-36	80	07/65	Prod; SI 1996-2006	NW/4, SE/4, S36, T9N, R57E	3,801	213,928		365
Eagle Springs Unit No. 4-36	86	10/65	SI 1997	NW/4, SE/4, S36, T9N, R57E	0	0		0
Eagle Springs Unit No. 5-36	94	04/66	Prod	NW/4, NE/4, S36, T9N, R57E	4,465	18,577		362
Eagle Springs Unit No. 15-35	21	07/55	Prod; SI 1995-2002	NW/4, SW/4, S35, T9N, R57E	984	6,073		105
Eagle Springs Unit No. 35-35	17	03/55	Prod	NE/4, SW/4, S35, T9N, R57E	2,378	17,396		358
Eagle Springs Unit No. 43-36	83	08/65	Prod	NE/4, SE/4, S36, T9N, R57E	466	7,563		97
Eagle Springs Unit No. 62-35	46	01/60	Prod	NW/4, NE/4, S35, T9N, R57E	2,648	55,859		334
Eagle Springs Unit No. 73-35	69	10/63	Prod	SE/4, NE/4, S35, T9N, R57E	7,567	70,830		352
Eagle Springs Unit No. 74-35	71	04/64	Prod; SI 1998-2001	SE/4, NE/4, S35, T9N, R57E	2,392	80,240		361
Eagle Springs Unit No. 84-35	77	01/65	SI 1997	SE/4, NE/4, S35, T9N, R57E	0	0		0
Eagle Springs/Plains Petroleum No. 13-36	744	02/96	Prod	SW/4, NW/4, S36, T9N, R57E	3,627	24,320		347
Eagle Springs/Plains Petroleum No. 23-36	733	10/95	Prod	SW/4, NW/4, S36, T9N, R57E	2,746	21,953		361
Eagle Springs/Plains Petroleum No. 24-36	737	11/94	Prod	SW/4, NW/4, S36, T9N, R57E	2,868	1,931		305
Eagle Springs/Plains Petroleum No. 55-35	761	11/95	SI 1997	SW/4, NE/4, S35, T9N, R57E	0	0		0
Eagle Springs/Plains Petroleum No. 64-35	755	09/95	Prod	SW/4, NE/4, S35, T9N, R57E	2,494	15,944		275
Eagle Springs/Plains Petroleum No. 82-35	734	10/94	Prod	NE/4, NE/4, S35, T9N, R57E	3,934	96,842		347
Eagle Springs/Plains Petroleum No. 83-35	754	07/95	Prod	SE/4, NE/4, S35, T9N, R57E	8,044	52,023		330
TRAP SPRING (Nye Co., 1976)								
J. N. Oil and Gas Federal No. 1	449	09/85	PA 1999	NE/4, NW/4, S34, T9N, R56E				
Frontier Exploration Co.								
Munson Ranch No. 13-1	435	08/85	Prod	SE/4, NW/4, S13, T9N, R56E	3,316	1,857		365
Munson Ranch No. 13-45	547	08/89	Prod	NW/4, SW/4, S13, T9N, R56E	1,966	3,643		364
Munson Ranch No. 13-46	548	07/89	SI 1992	NE/4, SW/4, S13, T9N, R56E	0	0		0
Munson Ranch No. 14-33	513	07/89	Prod	NW/4, SE/4, S14, T9N, R56E	1,675	5,335		355
Munson Ranch No. 14-49	550	08/89	Prod	NE/4, SE/4, S14, T9N, R56E	1,253	731		362
Munson Ranch No. 14-49X	562	02/90	Prod	NE/4, SE/4, S14, T9N, R56E	398	0		42
Trap Spring No. 14-42	523	10/88	Prod	SE/4, NE/4, S14, T9N, R56E	1,906	4,802		327
Makoil, Inc.								
Britton No. 13-21	224	04/78	SI 1991	NE/4, NW/4, S13, T9N, R56E	0	0		0
East Inselberg No. 36-33	860	04/05	SI 2006	NW/4, SE/4, S36, T10N, R56E	0	0		0
Munson Ranch No. 12-14	688	05/95	Prod	SW/4, SW/4, S12, T9N, R56E	402	480		60
Munson Ranch No. 12-23	596	11/90	SI 1998	NE/4, SW/4, S12, T9N, R56E	0	0		0
Munson Ranch No. 12-24	432	04/85	Prod	SE/4, SW/4, S12, T9N, R56E	4,337	13,031		362
Munson Ranch No. 12-32	559	12/89	Prod	SW/4, NE/4, S12, T9N, R56E	8,285	31,776		364
Munson Ranch No. 12-33	423	03/85	SI 1996	NW/4, SE/4, S12, T9N, R56E	0	0		0
Munson Ranch No. 12-34	406	10/84	Prod	SW/4, SE/4, S12, T9N, R56E	4,972	5,020		362
Munson Ranch No. 12-42	572	06/90	PA 2008	SE/4, NE/4, S12, T9N, R56E	0	0		0
Munson Ranch No. 12-43	880	03/08	Prod	NE/4, SE/4, S12, T9N, R56E	37,677	194		361
Munson Ranch No. 12-44X	445	07/85	PA 2008	SE/4, SE/4, S12, T9N, R56E	0	0		0
Munson Ranch No. 13-11	622	11/91	SI 2003	NW/4, NW/4, S13, T9N, R56E	0	0		0
Munson Ranch No. 13-11R	840	11/01	Prod	NW/4, NW/4, S13, T9N, R56E	4,960	26,984		365
Munson Ranch No. 13-14	623	09/91	Prod; SI 2001-2006	SW/4, SW/4, S13, T9N, R56E	5,221	79,573		357
Munson Ranch No. 13-21X	640	05/92	Prod	NE/4, NW/4, S13, T9N, R56E	5,548	25,788		361
Munson Ranch No. 13-24	218	08/79	Prod	SE/4, SW/4, S13, T9N, R56E	363	146		51
Munson Ranch No. 13-31	382	07/84	Prod	NW/4, NE/4, S13, T9N, R56E	3,206	18,075		362
Munson Ranch No. 13-32	373	08/84	Prod	SW/4, NE/4, S13, T9N, R56E	5,771	42,777		359
Munson Ranch No. 13-33	211	11/78	Prod	NW/4, SE/4, S13, T9N, R56E	1,778	5,389		365
Munson Ranch No. 13-41X	448	09/85	Prod	NE/4, NE/4, S13, T9N, R56E	10,750	68,551		362
Munson Ranch No. 13-42	222	11/78	Prod	SE/4, NE/4, S13, T9N, R56E	1,765	80,953		362
Munson Ranch No. 14-23	313	08/81	Prod	NE/4, SW/4, S14, T9N, R56E	2,160	33,570		363
Munson Ranch No. 14-24	354	10/83	SI 1996	SE/4, SW/4, S14, T9N, R56E	0	0		
Munson Ranch No. 14-32	455	09/87	Prod	SW/4, NE/4, S14, T9N, R56E	4,650	77,703		364
Munson Ranch No. 14-34	287	11/80	Prod	SW/4, SE/4, S14, T9N, R56E	50	115		23
Munson Ranch No. 14-34X	522	08/88	Prod	SW/4, SE/4, S14, T9N, R56E	2,726	11,013		364
Munson Ranch No. 14-41	538	07/89	Prod	NE/4, NE/4, S14, T9N, R56E	8,271	57,829		364
Munson Ranch No. 14-44	528	08/89	Prod	SE/4, SE/4, S14, T9N, R56E	3,683	130,360		362
Trap Spring No. 2	185	02/77	Prod	SE/4, SW/4, S27, T9N, R56E	8,853	430		364
Trap Spring No. 3	188	04/77	Prod	NW/4, NE/4, S34, T9N, R56E	10,069	984,388		343
Trap Spring No. 8	196	09/77	Prod	SE/4, SW/4, S23, T9N, R56E	795	177		119
Trap Spring No. 9	197	09/78	Prod	NW/4, NW/4, S26, T9N, R56E	20,348	377,611		336
Trap Spring No. 16	232	09/78	Prod	NW/4, SE/4, S23, T9N, R56E	2,348	226,242		358
Trap Spring No. 19	219	12/77	Prod	SE/4, NW/4, S23, T9N, R56E	9,839	2,155		333
Trap Spring No. 23-41	574	06/90	Prod	NE/4, NE/4, S23, T9N, R56E	1,945	216		354
Zuspann No. 24-1	198	06/77	SI 1986	NW/4, SW/4, S24, T9N, R56E	0	0		0
Zuspann No. 24-3	208	09/77	Prod	NE/4, NW/4, S24, T9N, R56E	51	0		10
CURRANT (Nye Co., 1979)								
Makoil, Inc.								
Currant No. 1	241	10/78	Prod; SI 2005-2007	SE/4, SW/4, S26, T10N, R57E	111	0		10
BACON FLAT (Nye Co., 1981)								
Breck Energy (Nevada), LLC								
Bacon Flat No. 1	316	07/81	SI 1988	C, SW/4, S17, T7N, R57E	0	0		0
Bacon Flat Federal No. 23-17	657	09/92	SI 1993	NE/4, SW/4, S17, T7N, R57E	0	0		0
Bacon Flat Federal No. 23-17A	710	01/94	Prod	NE/4, SW/4, S17, T7N, R57E	7,764	33,664		358

FIELD/OPERATOR/WELL	NEVADA PERMIT	DATE COMPLETED	STATUS	LOCATION	PRODUCTION OIL (BBL)	PRODUCTION WATER (BBL)	PRODUCTION GAS (MCF)	PRODUCTION DAYS
BLACKBURN (Eureka Co., 1982)								
Grant Canyon Oil and Gas, LLC								
Blackburn No. 3	324	03/82	SI 1998	SW/4, SW/4, S8, T27N, R52E	0	0		0
Blackburn No. 10	350	09/83	Prod	SW/4, NW/4, S8, T27N, R52E	5,010	13,072		314
Blackburn No. 14	442	07/85	Prod; SI 2001-2008	NE/4, SE/4, S7, T27N, R52E	31,722	5,353		306
Blackburn No. 16	458	12/85	Prod	SE/4, NE/4, S7, T27N, R52E	423	27,827		187
Blackburn No. 18	660	11/92	Prod	NE/4, SE/4, S7, T27N, R52E	15,308	433,028		364
Blackburn No. 19	724	06/94	Prod	NW/4, SW/4, S8, T27N, R52E	22,730	653,923		362
Blackburn No. 21	802	09/97	Prod	NE/4, SE/4, S7, T27N, R52E	2,437	455,091		355
GRANT CANYON (Nye Co., 1983)								
Grant Canyon No. 4	376	07/84	PA 1992	NE/4, NW/4, S21, T7N, R57E				
Grant Canyon No. 5	400	08/84	PA 1995	E/2, NE/4, S20, T7N, R57E				
Grant Canyon Oil and Gas, LLC								
Grant Canyon No. 3	375	08/84	SI 1992	SW/4, SW/4, S16, T7N, R57E	0	0		0
Grant Canyon No. 7	625	08/91	Prod; SI 1993-2007	NW/4, NW/4, S21, T7N, R57E	37,643	286,280		355
Grant Canyon No. 9	642	04/92	Prod	NW/4, NW/4, S21, T7N, R57E	14,303	17,567		361
Grant Canyon No. 22-21	705	01/94	Prod	SE/4, NW/4, S21, T7N, R57E	8,092	320,646		356
KATE SPRING (Nye Co., 1986)								
Makoil, Inc.								
Kate Spring No. 12-2	544	08/89	Prod	NW/4, NW/4, S2, T8N, R57E	7,640	11,851	1,030	365
Western General, Inc.								
Kate Spring No. 1	436	01/86	Prod	W/2, SW/4, S2, T8N, R57E	5,700	57,000	269	N/A
Kate Spring No. 1A	560	12/89	Prod	NW/4, SW/4, S2, T8N, R57E	20,765	205,960	2,245	N/A
Kate Spring No. 1C	592	09/91	SI 1997	SW/4, SW/4, S2, T8N, R57E	0	0	0	0
Taylor Federal No. 1	497	10/87	Prod	NE/4, SE/4, S3, T8N, R57E	4,333	145,497	403	N/A
Taylor Federal No. 2	536	06/89	SI 1993	SE/4, NE/4, S3, T8N, R57E	0	0	0	0
TOMERA RANCH (Eureka Co., 1987)								
Tomera Ranch No. 33-1	591	10/90	PA 1997	SW/4, SW/4, S33, T31N, R52E				
Southern Pacific Land Co. No. 1-5R	647	05/92	PA 2007	NE/4, NE/4, S5, T30N, R52E				
Tomera Ranch No. 33-2RR	841	01/02	PA 2007	SW/4, SW/4, S33, T31N, R52E				
Foreland Corp.								
Southern Pacific Land Co. No. 1-5	492	08/87	WD 1992	NE/4, NE/4, S5, T30N, R52E				
NORTH WILLOW CREEK (Eureka Co., 1988)								
North Willow Creek No. 5-27	646	06/93	PA 1998	SE/4, NW/4, S27, T29N, R52E				
Berry Petroleum Co.								
North Willow Creek No. 6-27	648	09/93	SI 2008	NE/4, SW/4, S27, T29N, R52E	0	0		0
Southern Pacific Land Co. No. 1-27	633	01/92	SI 2002	NW/4, SE/4, S27, T29N, R52E	0	0		0
THREE BAR (Eureka Co., 1990)								
Three Bar Federal No. 24-13A	566	09/90	PA 2000	SW/4, SW/4, S24, T28N, R51E				
Three Bar Federal No. 5	679	07/93	PA 2001	SE/4, NE/4, S25, T28N, R51E				
Three Bar Federal No. 25-A	556	10/90	PA 2001	C, NE/4, S25, T28N, R51E				
DUCKWATER CREEK (Nye Co., 1990)								
Makoil, Inc.								
Duckwater Creek No. 19-11	542	03/90	Prod	NW/4, NW/4, S19, T9N, R57E	120	1,080		33
SANS SPRING (Nye Co., 1993)								
Breck Energy (Nevada), LLC								
Federal No. 5-14	635	02/93	SI 1998	SW/4, NW/4, S14, T7N, R56E				
Sans Springs No. 5-14A	792	05/97	Prod	SW/4, NW/4, S14, T7N, R56E	1,419	0		104
Federal No. 12-14	673	06/93	SI 1993	SW/4, SW/4, S14, T7N, R56E				
GHOST RANCH (Nye Co., 1996)								
Makoil, Inc.								
Ghost Ranch Springs No. 2-21X	800	08/97	Prod	NE/4, NW/4, S2, T8N, R57E	9,034	61,739		228
Berry Petroleum Co.								
Ghost Ranch Springs No. 38-35	793	01/97	Prod	SE/4, SW/4, S35, T9N, R57E	7,525	175,416		347
Ghost Ranch Springs No. 47-35	799	03/97	Prod	SE/4, SW/4, S35, T9N, R57E	1,688	105,680		305
Ghost Ranch Springs No. 48-35	779	07/96	Prod	SE/4, SW/4, S35, T9N, R57E	5,768	153,719		352
DEADMAN CREEK (Elko Co., 1996)								
Deadman Creek No. 44-13	342	01/96	PA 1998	SE/4, SE/4, S13, T39N, R65E				
SAND DUNE (Nye Co., 1998)								
Berry Petroleum Co.								
Sand Dune Federal No. 88-35	816	07/98	Prod	SE/4, SE/4, S35, T9N, R57E	9,881	28,544		361
TOANO DRAW (Elko Co., 2007)								
Toano Draw No. 15-19	856	12/06	PA 2008	NW/4, SW/4, S19, T39N, R66E				

Nevada oil producers and refineries (Nevada Oil Patch; unpublished well files)

Company	Field/Refinery	Contact	Addresses, Phone and FAX Numbers, and Websites
Berry Petroleum Company	Eagle Springs Ghost Ranch North Willow Creek Sand Dune	Robert F. Heinemann	1999 Broadway, Suite 3700 Denver, CO 80202 Phone: 303-999-4400 FAX: 303-999-4401 Website: http://www.bry.com
Breck Energy (Nevada), LLC	Bacon Flat Sans Spring	Stephen Barnes	717 17th Street, No. 1400 Denver, CO 80202 Phone: 303-295-5990 FAX: 303-298-0049
Frontier Exploration Company	Trap Spring	Andy Pierce	3006 Highland Drive, No. 206 Salt Lake City, UT 84106 Phone: 801-486-5555 FAX: 801-486-5575
Makoil, Inc.	Currant Duckwater Creek Ghost Ranch Kate Spring Trap Spring	Gregg Kozlowski	25391 Commercentre Drive, No. 120 Lake Forest, CA 92630 Phone: 949-462-9010 FAX: 949-462-9012 Website: http://www.makoil.com
Grant Canyon Oil and Gas, LLC	Blackburn Grant Canyon	Michael O'Neal Rod Prosceno	717 17th Street, No. 1400 Denver, CO 80202 Phone: 303-297-2777
Western General	Kate Spring	Rick Taylor	801 Noahs Star Street Las Vegas, NV 89145-0609 Phone: 702-233-1490
Foreland Refining Corporation	Currant Refinery		HC 34 Box 34830 Ely, NV 89301 Phone: 775-863-0229

EXPLORATION

Three wells were permitted for oil and gas in 2008, down from 13 permitted in 2008. Three wells were spudded in 2009, down from eight spudded in 2008. Drilling was completed on two of these wells in 2009, which were plugged and abandoned. The third well was still being drilled at the end of the year. One well spudded in 2008 and completed in 2009 was listed as idle. These wells totaled 17,268 feet, down 52% from 35,877 feet in 2008. One well drilled in 2005 was still waiting for a completion rig. Nine wells drilled between 1993 and 2007 continued to be listed as either temporarily abandoned or testing. A well drilled in 1996 and another in 2002 and had been listed as testing since then were plugged and abandoned in 2009.

Oil well drilling activity in 2009

Company	Well	Permit No.	Location	Permit Date	Spud Date	Completion Date	Depth (Ft.)	Status
ELKO COUNTY								
Rock Investment Group	Isaiah 16-1	912	SW/4, NW/4, S16, T34N, R54E	MAR 09				Not Drilled
Fasken Oil and Ranch, LP	Papoose Canyon 14 Federal No. 1	913	SE/4, SE/4, S14, T29N, R52E	OCT 09				Not Drilled
HUMBOLDT COUNTY								
KBE Energy	Well No. 1	900	NE/4, NW/4, S10, T34N, R43E	APR 08	MAY 08		*5,500	TA
NYE COUNTY								
Breck Energy (Nevada), LLC	Federal No. 12-14	673	NW/4, SW/4, S14, T7N, R56E	APR 93	MAY 93	JUN 93	6,106	TA
Wester Oil Co.	Gigante No. 1-4	837	NW/4, NE/4, S4, T12N, R35E	MAY 01	AUG 01	DEC 03	7,707	TA
Tri Valley Oil and Gas	Midland Trail No. 1-32	861	SW/4, SW/4, S32, T6N, R56E	SEP 04	JUN 05	JAN 06	7,063	Testing
Makoil, Inc.	Radio No. 6-31	865	NE/4, NW/4, S6, T9N, R57E	SEP 04	MAY 05	MAY 05	3,433	Drilled
V. F. Neuhaus Properties, Inc.	Currant Creek Ranch 31-1	872	SE/4, SW/4, S31, T10N, R57E	JUL 05	JUL 05		*2,200	TA
Petro World Nevada Corp.	Cobble Questa No. 1-12	876	NW/4, SE/4, S12, T12N, R34E	DEC 05	SEP 06	APR 07	5,200	TA
Makoil Inc.	Trap Spring No. 27-41	899	NE/4, NE/4, S27, T9N, R56E	APR 08	DEC 08	JAN 09	7,294	Idle
Makoil Inc.	San Springs No. 15-41	902	NE/4, NE/4, S15, T7N, R56E	MAY 08	NOV 09	NOV 09	5,917	P&A
Richardson Operating	RR Valley Federal No. 2	906	SW/4, SW/4, S1, T7N, R55E	SEP 08				Not Drilled
Richardson Operating	RR Valley Federal No. 3	907	SW/4, SW/4, S23, T7N, R56E	SEP 08				Not Drilled
Makoil, Inc.	Munson Ranch No. 7-12	908	SW/4, SW/4, S7, T9N, R57E	OCT 08	OCT 09	OCT 09	4,057	P&A
Makoil Inc.	Munson Ranch No. 13-34	910	SW/4, SE/4, S13, T9N, R56E	DEC 08				Not Drilled
Makoil Inc.	Munson Ranch No. 12-23X	911	NE/4, SW/4, S12, T9N, R56E	DEC 08				Not Drilled
True Oil, LLC	DY Federal 43-36	914	NE/4, SE/4, S36, T07N, R56E	NOV 09	DEC 09			Drilling
PERSHING COUNTY								
Evans-Barton Ltd.	Kyle Spring No. 12-13D	759	NW/4, SW/4, S12, T29N, R36E	JUL 95	JUL 95	AUG 95	1,000	Testing
Evans-Barton, Ltd.	Kyle Spring No. 11-14	791	SW/4, SW/4, S11, T29N, R36E	OCT 96	NOV 96	NOV 96	2,622	P&A
Evans-Barton Ltd.	Kyle Spring No. 11-43	821	NE/4, SE/4, S11, T29N, R36E	JUL 98	SEP 98	DEC 02	865	P&A
Evans-Barton Ltd.	Kyle Spring No. 11-42A	838	NE/4, SE/4, S11, T29N, R36E	JUL 01	AUG 01		*625	Testing
Evans-Barton, Ltd	Kyle Spring No. 12-12	868	SW/4, NW/4, S12, T29N, R36E	OCT 04	DEC 04		*1,200	Testing
WHITE PINE COUNTY								
Geyser Petroleum	Pipeline Canyon No. 1	870	NE/4, SW/4, S28, T15N, R62E	JAN 05	MAR 05	SEP 05	5,280	Drilled
Makoil, Inc.	Cabin Spring No. 18-44	905	SE/4, SE/4, S18, T21N, R59E	SEP 08				Not Drilled

P&A: Plugged and abandoned, TA: Temporarily abandoned, *: permitted depth, which is given when the actual depth is not available

One rig operated during all periods except the March/April period, when none operated.

In 2009, 1,794 oil leases were in effect in Nevada, which was an increase of 14% from 2008. These covered 3,516,096 acres, which was a decrease of 15%. This is about 7% of the public lands managed by the U.S. Bureau of Land Management (BLM) in Nevada and covers an area slightly smaller than the State of Connecticut.

Federal oil and gas leases in effect in fiscal years 2008 and 2009[1]

	NUMBER OF LEASES						ACREAGE					
	Competitive		Noncompetitive		Simultaneous[2]		Competitive		Noncompetitive		Simultaneous[2]	
County	FY08	FY09	FY08	FY09	FY08	FY09	FY08	FY09	FY08	FY09	FY08	FY09
Carson City	0	0	0	0	0	0	0	0	0	0	0	0
Churchill	2	2	2	0	0	0	5,100	5,100	5,093	0	0	0
Clark	0	0	5	1	0	0	0	0	7,100	480	0	0
Douglas	0	0	0	0	0	0	0	0	0	0	0	0
Elko	153	196	248	283	0	0	248,502	303,753	673,908	693,924	0	0
Esmeralda	0	19	0	6	0	0	0	37,625	0	10,812	0	0
Eureka	119	134	120	65	1	0	195,645	236,531	373,614	220,606	622	0
Humboldt	0	0	0	0	0	0	0	0	0	0	0	0
Lander	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln	39	43	16	38	0	0	83,325	81,837	44,707	74,264	0	0
Lyon	0	0	0	0	0	0	0	0	0	0	0	0
Mineral	0	2	11	9	0	0	0	4,149	29,452	24,120	0	0
Nye	255	284	164	170	20	20	279,668	299,518	427,693	406,301	7,998	7,998
Pershing	0	0	0	0	0	0	0	0	0	0	0	0
Storey	0	0	0	0	0	0	0	0	0	0	0	0
Washoe	0	0	0	0	0	0	0	0	0	0	0	0
White Pine	158	157	263	365	0	0	282,304	274,752	684,677	834,326	0	0
Total	726	837	829	937	21	20	1,904,544	1,243,265	2,246,244	2,264,833	8,620	7,998

[1]Data from the U.S. Bureau of Land Management. Fiscal years (FY) run from October 1 through September 30.

[2]These are the remaining leases that were issued under the simultaneous leasing program that was terminated by the December 22, 1987 amendment to the 1920 Mineral Leasing Act.

On March 10, 2009, the Nevada State Office of the Bureau of Land Management (NSO-BLM) held an oil and gas lease sale on 492 parcels covering 886,306 acres. The bids totaled $105,685.00 on 25 parcels covering 43,798 acres, which averaged $2.41 per acre. The three highest bids were all made by Heritage Capital, LLC, of Henderson, NV, and were $6.50 per acre for Parcel 233 consisting of 1,922 acres covering a portion of section 5 and all of sections 8 and 17; $6.00 per acre for Parcel 232 consisting of 1,922 acres covering a portion of section 2 and all of sections 9 and 16; and $3.00 per acre for Parcel 231 consisting 1,921 acres covering a portion of section 3 and all of sections 10 and 15. All parcels were in T7N, R66E in Lincoln County. The remaining parcels for the $2.00 per acre minimum (*IHS Drilling Wire, Rocky Mountain Region, Four Corners Edition*, Section I, February 4, 2009; *IHS Drilling Wire, Rocky Mountain Region, Northern Edition*, Section I, March 9, 2009).

On June 9, 2009, the NSO-BLM held an oil and gas lease sale on 274 parcels covering 456,978 acres in Elko, Eureka, Lincoln, Nye, and White Pine Counties. The bids totaled $494,324.71 on 41 parcels covering 58,807 acres, which averaged $8.41 per acre. The two highest bids were made by made by Energy Exploration of Nevada, LLC. of Reno, NV, and were $110.00 per acre for Parcel 109 consisting of 480 acres covering portions of sections 29, 31, 32, 33, and 34, and $52.50 per acre for Parcel 108

consisting of 480 acres covering portions of sections 14, 15, and 23. Both parcels are in T9N, R57E in Nye County. The third highest bid was $30 per acre by John Wolcott of Grand Junction, CO, for parcel 151 consisting of 1303 acres covering sections 2 and 10, T33N, R58E in Elko County. Eight parcels brought bids between $22.50 and $11.00 per acre, five parcels brought bids between $2.50 and $10.00, and the rest brought the $2.00 per acre minimum (*IHS Drilling Wire, Rocky Mountain Region, Newsletter Edition*, Section I, May 22, 2009; *Nevada Oil Reporter*, March/April, 2009).

On September 8, 2009, the NSO-BLM held an oil and gas lease sale on 85 parcels covering 151,976 acres in Elko, Eureka, Mineral, Nye, and Pershing counties.The bids totaled just $3,838.00 on 2 parcels covering 1,919 acres at the $2.00 per acre minimum. Orbit Resources Corp. of Houston, TX, acquired Parcel 27 consisting of 1,280 acres covering all of sections 1 and 11, T6N, R54E in Nye County, and Pancake Land, LLC, of West Jordan, UT, acquired Parcel 33 consisting of 639 acres covering all of section 19, T9N, R55E, in Nye County (*IHS Drilling Wire, Rocky Mountain Region, Newsletter Edition*, Section I, August 14, 2009; *IHS Drilling Wire, Rocky Mountain Region, Newsletter Edition*, Section I, September 8, 2009).

On December 15, 2008, the NSO-BLM held an oil and gas lease sale on 44 parcels covering 78,307 acres in Eureka, Lincoln, Nye, and White Pine Counties. The bids totaled $53,411 on 15 parcels covering 24,576 acres, which averaged $2.17 per acre. The highest bid was $5 per acre made by the Makoil, Inc., of Las Vegas, NV, for Parcel 15 consisting of 1,045 acres covering portions of sections 4, 9, and 10, T10N, R57E in Nye County. The second highest bid was $4 per acre made by DY Exploration, Inc., of Boise, ID, for Parcel 7 consisting of 560 acres covering portions of section 1, T6N, R56E in Nye County. All other bids brought the $2.00 per acre minimum (*IHS Drilling Wire, Rocky Mountain Region, Four Corners Edition*, Section I, November 11, 2009; *IHS Drilling Wire, Rocky Mountain Region, Newsletter Edition*, Section I, December 18, 2009).

TRANSFERS

In 2009, Double D Nevada, LLC, transferred ownership of the Sans Spring and Bacon Flat oil fields to Breck Energy (Nevada), LLC, and then went out of business. Breck Energy (Nevada), LLC, was incorporated in Nevada in 2009. In 2009, Blackburn

Oil and Gas, LLC, owners of the Blackburn oil field, and Saddle Rim Energy, LLC, of Reno, NV, merged with Grant Canyon Oil and Gas, LLC.

OTHER DEVELOPMENTS

In 2008, Ruby Pipeline, LLC, a subsidiary of the El Paso Corporation of Houston, TX, North America's largest pipeline company and a major natural gas producer, initiated cultural and environmental studies for its Ruby Pipeline Project. On January 27, 2009, an application was filed with the Federal Regulatory Commission for a certificate of convenience and necessity authorizing the construction and operation of the pipeline. A draft environmental impact statement (EIS) was completed in June 2009 and a final EIS in January 2010. The Ruby Pipeline Project will be a 680-mile, 42-inch pipeline to carry natural gas from the Opal Hub, WY, to the Malin, OR, interconnect where it will supply Nevada and west coast markets. The initial capacity will be 1.2 billion cubic feet per day, which can be expanded to 2 billion cubic feet per day. In Nevada, the preferred route will be to cross in from Utah approximately near Tecoma; pass through Elko County north of Wells and Elko and Humboldt County north of Winnemucca and the Black Rock Wilderness and south of the Sheldon National Refuge, and cross into Oregon near the far northwest corner of Washoe County. The pipeline is anticipated to connect with the Paiute Pipeline in Humboldt County and is estimated to be ready for use in March 2011 (http://www.rubypipeline.com).

In 2009, the BLM published in the *Federal Register*, a solicitation for the nomination of parcels to be leased for Research, Development, and Demonstration of oil shale recovery technologies in the states of Colorado, Utah, and Wyoming (*Federal Register*, vol. 74, no. 211, Tuesday, November 3, 2009, p. 56867-56869, Notice of Potential for Oil Shale Development: Call for Nominations – Oil Shale Research, Development, and Demonstration Program). Though the solicitation is specific to Colorado, Wyoming, and Utah, it should be noted that northeastern Nevada has an estimated 600 million barrels of shale oil in the lacustrine Eocene Elko Formation (12,000 barrels were produced between 1917 and 1924) and a potentially large but unestimated resource in related rocks (L. J. Garside, 1983, *Nevada Oil Shale*, Nevada Bureau of Mines and Geology Open-File report 83-5; S. W. Moore, H. B. Madrid, and G. T. Server, Jr., 1982, *Results of Oil-Shale Investigations In Northeastern Nevada*, U.S. Mineral Management Service Administrative Report; G. T. Server, Jr., and B. J.

Solomon, 1983, *Geology and Oil Shale Deposits of the Elko Formation, Pinion Range, Elko County, Nevada*, U.S. Geological Survey Map MF-1546; B. J. Solomon and S. W. Moore, 1982, *Geology and Oil Shale Deposits of the Elko West Quadrangle, Elko County, Nevada*, U.S. Geological Survey Map MF-1410; B. J. Solomon and S. W. Moore, 1982, *Geology and Oil Shale Deposits of the Elko East Quadrangle, Elko County, Nevada*, U.S. Geological Survey Map MF-1421).

On January 14, 2009, the BLM signed a Record of Decision (ROD) amending 92 land use plans supporting the designation of more than 6,000 miles of energy transport corridors on Federal Lands in 11 western states. The Energy Policy Act of 2005 had directed the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to designate corridors on federal land for hydrogen pipelines and electricity transmission lines and related structures. These "energy corridors" were designated to be in Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. The results were published November 2008 in four volumes as *West-wide Energy Corridor Programmatic Final Environmental Impact Statement (EIS)* a. k. a. *Programmatic Final Environmental Impact Statement, Designation of Energy Corridors on Federal Land in 11 Western States* (DOE/EIS-0386). For more information and to view the EIS and ROD, please visit the website: http://corridoreis.anl.gov.

The U.S. Securities and Exchange Commission (SEC) passed a new set of reporting rules for oil companies that took effect in January 2010. According to these new rules, reserve calculations will use the average oil and gas price for the first day of each month of the prior year instead of the year-end price. Non-traditional or unconventional sources such as bitumen from oil sands and oil and gas extracted from coal and shale have been added to the definition of "oil and gas activities." Companies will have the option of disclosing probable and possible reserves in SEC filings. Operators can book more proved undeveloped reserves (PUD) as long as reliable technology exists to develop them economically, but a plan must be in place to develop them within five years (*Federal Register*, vol. 74, no. 9, Wednesday, January 14, 2009, p. 2158-2197, *Modernization of Oil and Gas Reporting*).

U.S. OIL PRODUCTION AND CONSUMPTION

According to the Energy Information Agency of the U.S. Department of Energy (http://www.eia.doe.gov), the total petroleum products supplied to the U.S. averaged 18.8 million barrels per day in 2009, down 3.6% from 19.5 million barrels per day in 2008 and down 9.6% from the all time high of 20.8 million barrels per day in 2005. Domestic crude oil production averaged 5.36 million barrels per day in 2009, up 8.3% from 4.95 million barrels per day in 2008. The annual production for 2009 is the highest since 2004 and the first increase since 1991. Prior to the 2005-2008 period, the last time production was lower than in 2009 was 1949 when production was 5.05 million barrels per day. Imported crude oil averaged 9.01 million barrels per day in 2009, down 7.9% from 9.78 million barrels per day in 2008, and down 11% from the all time high of 10.13 million barrels per day in 2005. Imported crude oil still accounted for 62.7% of the total in 2009, down from 66.3% in 2008. The average price of domestic oil decreased 40% to $56.35 per barrel in 2009 from an average of $94.04 per barrel in 2008, an all time high annual average.

Directory of Mining and Milling Operations

By David A. Davis

Compiled from information supplied by the Nevada Division of Minerals and the Mine Safety and Training Section of the Division of Industrial Relations.
Sand and gravel operations with less than 100,000 tons annual production are not listed.
CIL = carbon-in-leach, CIP = carbon-in-pulp, HL = heap leach, ML = mill, N/A = not available or not applicable, OP = open-pit mine, OS = other surface, UG = underground

MINE/MILL NAME	OPERATOR	LOCATION	COMMODITY	TYPE	ACTIVITY	COMPANY/ CONTRACT EMPLOYEES	ADDRESS
CARSON CITY							
Black and Red Cinder Pits	Cinderlite Trucking, Inc.	S21, 22, T16N, R20E	cinder landscape rock	OP, ML	mining screening	2	1665 South Sutro Terrace Carson City, NV 89706 Phone: 775-882-4483 FAX: 775-882-1671 Web: http://www.cinderlite.com
Goni Pit	Cinderlite Trucking Corp.	S28, T16N, R20E	decomposed granite sand gravel	OP, ML	mining crushing screening	6	1665 South Sutro Terrace Carson City, NV 89706 Phone: 775-882-4483 FAX: 775-882-1671 Web: http://www.cinderlite.com
CHURCHILL COUNTY							
Hazen Pit	A and K Earthmovers	S3, T19N, R26E	aggregate sand	OP, ML	mining crushing screening	8	P. O. Box 1059 1200 Auction Rd. Fallon, NV 89407 Phone: 775-423-6085 FAX: 775-423-8410 Web: http://www.akearthmovers.com
Huck Salt	Huck Salt Co.	S11, 12, 13, T16N, R31E; S7, T16N, R32E	salt	OS	mining evaporation	9	2900 Phritzie Lane Fallon, NV 89406 Phone: 775-423-2055 FAX: 775-423-0467
Moltan Mine and Plant	Moltan Company, LP	S28, 32, T23N, R27E	diatomite	OP, ML	mining crushing drying packaging screening	44	P. O. Box 860 I-80 Frontage Rd. Fernley, NV 89408-0860 Phone: 775-423-6668 FAX: 775-423-6411 Web: http://www.moltan.com
Nightingale Pit	World Minerals, Inc.	S17, 18, 19, 20, T24N, R26E	diatomite	OP	mining	2/1	100 Front St. Fernley, NV 89408 Phone: 775-575-2536 FAX: 775-575-1570 Web: http://www.worldminerals.com
Noble Perlite Plant	Noble Acquisition, LLC	S24, T19N, R27E	perlite	ML	expanding	16	7525 Rockwood Place Fallon, NV 89406 Phone: 775-423-3997 Web: http://www.dicalite.com
Popcorn Mine	EP Minerals, LLC	S24, T16N, R28E; S19, T16N, R29E	perlite	OP	mining	1	640 Clark Station Rd. Sparks, NV 89434 Phone: 775-824-7700 FAX: 775-824-7715 Web: http://www.epminerals.com
CLARK COUNTY							
Apex Landfill Pit	Las Vegas Paving Corp.	S19, T18S, R64E	sand gravel	OP, ML	mining crushing screening	33	4420 South Decatur Blvd. Las Vegas, NV 89103 Phone: 702-251-5800 FAX: 702-251-1968 Web: http://www.lasvegaspaving.com
Apex Quarry and Plant	Chemical Lime Co.	S14, 22, 23, 26, 27, 34, 35, T18S, R63E	limestone	OP, ML	mining calcining crushing screening	119	P. O. Box 363068 North Las Vegas, NV 89036 Phone: 702-643-7702 FAX: 702-643-9517 Web: http://www.chemicallime.com
Blue Diamond Pit	Las Vegas Paving Corp.	S26, T22S, R60E	sand gravel	OP, ML	mining crushing screening	11	4420 South Decatur Blvd. Las Vegas, NV 89103 Phone: 702-251-5800 FAX: 702-251-1968 Web: http://www.lasvegaspaving.com
Boulder Ranch Quarry	Quarry 187, LLC	S15, 22, T23S, R63E	sand gravel	OP, ML	mining crushing screening	2	250 Pilot Rd., Suite No. 160 Las Vegas, NV 89120 Phone: 702-597-1010 FAX: 702-597-3406 Web:http://www.impactsandandgravel.com

Directory of Mining and Milling Operations (continued)

MINE/MILL NAME	OPERATOR	LOCATION	COMMODITY	TYPE	ACTIVITY	COMPANY/ CONTRACT EMPLOYEES	ADDRESS
Cactus Pit	Impact Sand and Gravel	S27, T22S, R61E	sand gravel	OP, ML	mining crushing screening	36	250 Pilot Rd., Suite No. 160 Las Vegas, NV 89120 Phone: 702-597-1010 FAX: 702-597-3406 Web:http://www.impactsandandgravel.com
Georgia-Pacific Gypsum Plant	Georgia-Pacific Gypsum, LLC	S34, 35, T18S, R63E	gypsum	ML	crushing	97	P. O. Box 337350 11401 U. S. Highway 91 North Las Vegas, NV 89033 Phone: 702-643-8100 FAX: 702-643-2049 Web: http://www.gp.com
Henderson Plant	Chemical Lime Co.	S12, T22S, R62E	lime	ML	calcining	20	P. O. Box 127 BMI Complex 8000 West Lake Mead Dr. Henderson, NV 89015 Phone: 530-878-7368 FAX: 413-451-2474 Web: http://www.chemicallime.com
Jean Decorative Rock Pit	R. L. McVane, Inc.	S18, T25S, R61E	landscape rock	OP	mining	N/A	720 North Racetrack Rd. Henderson, NV 89015 Phone: 702-567-6360
Jean Pit	Service Rock Products	S28, T24S, R60E	sand gravel	OP, ML	mining crushing screening	12	151 Cassia Way Henderson, NV 89014 Phone: 702-798-0568 FAX: 702-798-0580 Web: http://www.servicerock.com
KMI Zeolite Plant	KMI Zeolite, Inc.	S3, T25S, R57E	zeolite	ML	processing	4	HCR 37 Box 52 3100 East Sandy Valley Road Sandy Valley, NV 89019 Phone: 702-723-5415 Web: http://www.kmizeolite.com
Lone Mountain	American Sand and Gravel, LLC	S36, T19S, R59E	sand gravel	OP, ML	mining gravity	19 (All pits combined)	5260 Beesley Dr. Las Vegas, NV 89115 Phone: 702-452-1900 FAX: 702-651-0375 Web: http://americansandandgravel.com
Lone Mountain	Hollywood Gravel, Inc.	S35, T19S, R59E	sand gravel	OP, ML	mining crushing screening	2/1	3560 South Polaris Ave., No. 3 Las Vegas, NV 89103 Phone: 702-870-7094 FAX: 702-870-8114
Lone Mountain	Impact Sand and Gravel	S24, 36, T19S, R59E	sand gravel	OP, ML	mining crushing screening	30	250 Pilot Rd., Suite No. 160 Las Vegas, NV 89120 Phone: 702-597-1010 FAX: 702-597-3406 Web:http://www.impactsandandgravel.com
Lone Mountain	Las Vegas Paving Corp.	S35, 36, T19S, R59E; S2, T20S, R60E	aggregate	OP, ML	mining crushing screening	8	4420 South Decatur Blvd. Las Vegas, NV 89103 Phone: 702-251-5800 FAX: 702-251-1968 Web: http://www.lasvegaspaving.com
Lone Mountain	Nevada Ready Mix Corp.	S36, T19S, R59E	sand gravel	OP, ML	mining crushing screening	80	601 West Bonanza Las Vegas, NV 89106 Phone: 702-457-1115 Web: http://www.nevadareadymix.com
Lone Mountain	Quality Sand and Gravel	S1, T20S, R59E	sand gravel	OP, ML	mining crushing screening	3	281 Commerce Park Ct. North Las Vegas, NV 89032 Phone: 702-646-3846 FAX: 702-646-3484
Lone Mountain Community Pit	Various (U. S. Bureau of Land Management manages pit)	S36, T19S, R59E; S1, T20S, R59E	sand gravel	OP, ML	mining crushing screening	N/A	Bureau of Land Management 4701 North Torrey Pines Dr. Las Vegas, NV 89130-2301 Phone: 702-515-5000 Web: http://www.blm.gov
Mesquite Community Pit	Aggregate Industries	S20, T13S, R71E	sand gravel	OP, ML	mining crushing screening	N/A	3101 East Craig Rd. North Las Vegas, NV 89030 Phone: 702-649-6250 FAX: 702-642-2213 Web: http://www.aggregate-us.com

Directory of Mining and Milling Operations (continued)

MINE/MILL NAME	OPERATOR	LOCATION	COMMODITY	TYPE	ACTIVITY	COMPANY/ CONTRACT EMPLOYEES	ADDRESS
Mesquite Community Pit	Precision Aggregate Product, LLC	S20, T13S, R71E	sand gravel	OP, ML	mining crushing screening	3	340 Falcon Parkway, Building 500C P. O. 2458 Mesquite, NV 89027 Phone: 702-346-1343 FAX: 702-345-3757 Web: http://www.precisionaggregate.com
Mesquite Community Pit	Rees's Enterprise	S20, T13S, R71E	sand gravel	OP, ML	mining crushing screening	5	1045 South Hoytsville Road Coalville, UT 84017-9741 Phone: 801-359-9781 Web: http://www.reesenterprised.net
Moapa Pit	Ready Mix, Inc.	S2; T15S, R66E	aggregate	OP, ML	mining milling	11/3	3430 East Flamingo Road, Suite 100 Las Vegas, NV 89021 Phone: 702-433-2090 FAX: 702-433-0189 Web: http://www.readymixinc.com
PABCO Gypsum-Apex Pit	Pacific Coast Building Products,	S7, 18, T20S, R64E	gypsum	OP, ML	mining crushing washing	106/2	P. O. Box 364329 North Las Vegas, NV 89036 Phone: 702-407-3700 FAX: 702-643-6249 Web: http://www.paccoast.com
Pioneer Gypsum Mine	Pioneer Gypsum Mining Co.	S19, 20, 29, 30, T20S, R64E	gypsum	OP, ML	mining crushing screening	8	4880 Donovan Way North Las Vegas, NV 89081 Phone: 702-399-5939 FAX: 702-399-8353
Pipes Pit	Pipes Paving	S1, T20S, R59E	sand gravel	OP, ML	mining crushing screening	3	3529 Clayton St. North Las Vegas, NV 89032 Phone: 702-647-1162 FAX: 702-647-2387
Pittman Detention Pit	Aggregate Industries	S9, 10, T23S, R61E	sand gravel	OP, ML	mining crushing screening	5	3101 East Craig Rd. North Las Vegas, NV 89030 Phone: 702-649-6250 FAX: 702-642-2213 Web: http://www.aggregate-us.com
Providence Pit	Impact Sand and Gravel	S13, T19S, R59E	sand gravel	OP, ML	mining crushing screening	N/A	250 Pilot Rd., Suite No. 160 Las Vegas, NV 89120 Phone: 702-597-1010 FAX: 702-597-3406 Web:http://www.impactsandandgravel.com
Rainbow Quarries	Las Vegas Rock, Inc.	S34, T25S, R58E	gravel stone	OP, ML	mining crushing sawing	14	2 Prison Rd. P. O. Box 19118 Jean, NV 89019 Phone: 702-791-7625 FAX: 702-874-1881 Web: http://www.vegasrock.com
Salt Lake Highway Pit	Various (U. S. Bureau of Land Management manages pit)	S13, 24, T19S, R62E; S17, 18, 19, T19S, R63E	sand gravel	OP	mining	N/A	Bureau of Land Management 4701 North Torrey Pines Dr. Las Vegas, NV 89130-2301 Phone: 702-515-5000 Web: http://www.blm.gov
Sierra Ready Mix Quarry	Sierra Ready Mix, LLC	S6, 7, T25S, R60E	sand gravel	OP, ML	mining crushing screening	4	4150 Smily Rd. North Las Vegas, NV 89081 Phone: 702-664-3000 FAX: 702-664-1736 Web: http://www.sierrareadymix.com
Simplot Silica Products Pit	J. R. Simplot Co.	S11, T17S, R67E	silica sand	OP, ML	mining drying flotation screening	37	P. O. Box 308 Overton, NV 89040 Phone: 702-397-2667 FAX: 702-397-2798 Web: http://www.simplot.com
Sloan Quarry and Mill	Aggregate Industries	S13, T23S, R60E	sand gravel	OP, OS, ML	mining crushing screening	48	3101 East Craig Rd. North Las Vegas, NV 89030 Phone: 702-649-6250 FAX: 702-642-2213 Web: http://www.aggregate-us.com
Speedway Pit	American Sand and Gravel, LLC	S24, T19S, R62E	sand gravel	OP, ML	mining gravity	19 (All pits combined)	5260 Beesley Dr. Las Vegas, NV 89115 Phone: 702-452-1900 FAX: 702-651-0375 Web: http://americansandandgravel.com

Directory of Mining and Milling Operations (continued)

MINE/MILL NAME	OPERATOR	LOCATION	COMMODITY	TYPE	ACTIVITY	COMPANY/ CONTRACT EMPLOYEES	ADDRESS
Speedway Pit	Various (U. S. Bureau of Land Management manages pit)	S19, T19S, R63E	sand gravel	OP, ML	mining	N/A	Bureau of Land Management 4701 North Torrey Pines Dr. Las Vegas, NV 89130-2301 Phone: 702-515-5000 Web: http://www.blm.gov
Spring Mountain Pit and Mill	Wells Cargo, Inc.	S10, 15; T21S, R60E	sand gravel	OP, ML	mining gravity	7	P. O. Box 81170 7770 West Spring Mountain Rd. Las Vegas, NV 89160 Phone: 702-876-5090 FAX: 702-876-3977 Web: http://www.wcilv.com
DOUGLAS COUNTY							
Bing Materials Pit and Plant	Bing Materials Co.	S16, T12N, R20E	sand gravel	OP, ML	mining crushing screening	9	P. O. Box 487 Minden, NV 89423 Phone: 775-265-3641
ELKO COUNTY							
Big Ledge Mine	NOV Minerals, LP	S26, T42N, R61E	barite	OP	mining	N/A	P. O. Box 900 Wells, NV 89935
Elburz Pit	Vega Construction and Trucking Co.	S9, T33N, R52E	sand gravel	OP, ML	mining crushing screening	23	P. O. Box 1630 Elko, NV 89803 Phone: 775-738-5381 FAX: 775-738-6311
Hollister Mine	Rodeo Creek Gold, Inc., and Great Basin Gold, Inc.	S4, 5, T37N, R48E; S32, T38N, R48E	gold silver	UG	mining	159/46	P. O. Box 2610 Winnemucca, NV 89446 Phone: 775-623-6912 FAX: 775-623-5767 Web: http://www.greatbasingold.com
Jerritt Canyon Mine	Queenstake Resources USA, Inc.	T39-41N, R52-54E	gold silver mercury	UG, ML, CIL	mining heap leach milling roasting	120	HC31 Box 78 Elko, NV 89801 Phone: 775-738-5006 FAX: 775-758-9231 Web: http://www.yukon-nevadagold.com
Meikle Mine	Barrick Goldstrike Mines, Inc.	S12, 13, T36N, R50E	gold silver	UG, ML	mining milling roasting	767	P. O. Box 29 Elko, NV 89803 Phone: 775-778-8858 FAX: 775-778-8865 Web: http://www.barrick.com
Midas Mine	Newmont Mining Corp.	S21, 22, 27, 28, 33, 34, T39N, R46E	gold silver	UG, ML	mining milling	262	HC66 Box 125 Midas, NV 89414 Phone: 775-635-6423 FAX: 775-635-6460 Web: http://www.newmont.com
Pilot Peak Quarry and Plant	Graymont Western US., Inc.	S14, 15, 22, 23, 26, T34N, R68E	limestone	OP, ML	mining calcining rotary kiln	54	P. O. Box 2520 West Wendover, NV 89883 Phone: 775-483-5463 FAX: 775-483-5149 Web: http://www.graymont.com
Rossi Mine	BAROID/Halliburton Energy Services, Inc.	S14-16, 21-23, 26-28, 34-35, T37N, R49E	barite	OP, ML	mining	0/15	912 Dunphy Ranch Rd. Battle Mountain, NV 89820 Phone: 775-468-0515 FAX: 775-468-2060 Web: http://www.halliburton.com
Storm Project	Barrick Goldstrike Mines, Inc.	S12, 13, T36N, R49E	gold	UG, ML	mining roasting	5/80	P. O. Box 29 Elko, NV 89803 Phone: 775-778-8858 FAX: 775-778-8865 Web: http://www.barrick.com
ESMERALDA							
Basalt Plant	Grefco Minerals, Inc.	S29, T2N, R34E	diatomite	OP, ML	drying milling	5	P. O. Box 278 Dyer, NV 89010 Phone:775-573-2422 FAX: 775-573-2422 Web: http://www.dicalite.com

Directory of Mining and Milling Operations (continued)

MINE/MILL NAME	OPERATOR	LOCATION	COMMODITY	TYPE	ACTIVITY	COMPANY/ CONTRACT EMPLOYEES	ADDRESS
Blanco Mine	Vanderbilt Minerals Corp.	S22, T1N, R37E	clay	OP	bagging grinding screening	4	3561 East Burgundy Dr. P. O. Box 6660 Pahrump, NV 89048 Phone: 775-537-6976 FAX: 775-537-6879 Web: http://www.rtvanderbilt.com
Silver Peak Operations	Chemetall Foote Corp.	T2S, R39-40E	lithium carbonate	OS, ML	mining evaporation precipitation	27/4	P. O. Box 98 Silver Peak, NV 89047 Phone: 775-937-2222 FAX: 775-937-2250 Web: http://www.chemetall.com
EUREKA COUNTY							
Betze/Post Mine	Barrick Goldstrike Mines, Inc.	S23-26, T36N, R49E; S12, 20, 29, 30; T36N, R50E	gold silver	OP, CIL, HL, ML	mining heap leach milling roasting	1008	P. O. Box 29 Elko, NV 89803 Phone: 775-748-1001 FAX: 775-748-1240 Web: http://www.barrick.com
Carlin North - Genesis Complex	Newmont Mining Corp.	S33, T36N, R50E	gold silver	OP, HL, ML	mining bioleaching heap leach milling roasting	2175 (Combined Newmont Carlin Trend Operations)	P. O. Box 669 Carlin, NV 89822-0669 Phone: 775-778-4000 FAX: 775-778-4751 Web: http://www.newmont.com
Carlin North - Post and adjacent mines	Newmont Mining Corp.	S19, T36N, R50E	gold silver	OP, HL, ML	mining bioleaching heap leach milling roasting	2175 (Combined Newmont Carlin Trend Operations)	P. O. Box 669 Carlin, NV 89822-0669 Phone: 775-778-4000 FAX: 775-778-4751 Web: http://www.newmont.com
Carlin South - Carlin and adjacent mines	Newmont Mining Corp.	S14, T35N, R50E	gold silver	UG, HL, ML	mining bioleaching heap leach milling roasting	2175 (Combined Newmont Carlin Trend Operations)	P. O. Box 669 Carlin, NV 89822-0669 Phone: 775-778-4000 FAX: 775-778-4751 Web: http://www.newmont.com
Carlin South - Gold Quarry and adjacent mines	Newmont Mining Corp.	S3, T33N, R51E	gold silver	OP, HL, ML	mining bioleaching heap leach milling roasting	2175 (Combined Newmont Carlin Trend Operations)	P. O. Box 669 Carlin, NV 89822-0669 Phone: 775-778-4000 FAX: 775-778-4751 Web: http://www.newmont.com
Dunphy Mill	BAROID/Halliburton Energy Services, Inc.	S26, T33N, R48E	barite	ML	crushing gravity grinding	40/7	912 Dunphy Ranch Rd. Battle Mountain, NV 89820 Phone: 775-468-0515 FAX: 775-468-2060 Web: http://www.halliburton.com
Nevada Barth Iron Mine and Mill	Saga Exploration Co.	S7, T31N, R51E	iron ore	OP, ML	screening	3	2339 Dickerson Road Reno, NV 89503 Phone: 775-322-9994
Ruby Hill Mine	Barrick Goldstrike Mines, Inc.	S9-11, 14, 15, T19N, R53E	gold silver	OP, CIL, CIP, HL, ML	heap leach milling	127	P. O. Box 676 Eureka, NV 89316 Phone: 775-237-6060 FAX: 775-237-5408 Web: http://www.barrick.com
HUMBOLDT COUNTY							
Ashdown Mine	Win-Eldrich Mines, Ltd.	S14, T45N, R29E	molybdenum	UG, ML	mining flotation milling	12	1675 East Prater Way, Suite No. 102 Sparks, NV 89434 Phone: 775-941-0274 FAX: 775-941-0271 Web: http://www.win-eldrich.com
Bonanza Opal Mine	Bonanza Opal Mines, Inc.	S6, 7, T45N, R26E	precious opal	OP	mining	1	P. O. Box 127 Denio, NV 89404 Phone: (Summer) 775-941-0111 Phone: (Winter) 864-597-1421 Web: http://www.bonanzaopals.net
Hycroft Mine	Allied Nevada Gold Corp	S26, T35N, R29E	gold silver	OP, HL	mining heap leach	159	P. O. Box 3030 Winnemucca, NV 89446 Phone: 775-623-5260 FAX: 775-623-0215 Web: http://www.alliednevada.com/
Lone Tree Mine	Newmont Mining Corp.	S1, 11, 13, 15, 23, T34N, R42E	gold silver	OP, HL, ML	mining flotation heap leach milling	54	P. O. Box 388 Valmy, NV 89438-0388 Phone: 775-635-6423 FAX: 775-635-6460 Web: http://www.newmont.com

Directory of Mining and Milling Operations (continued)

MINE/MILL NAME	OPERATOR	LOCATION	COMMODITY	TYPE	ACTIVITY	COMPANY/ CONTRACT EMPLOYEES	ADDRESS
Marigold Mine	Goldcorp, Inc.	S8, 9, 18-20; T33N, R43E	gold silver	OP, HL, ML	mining heap leach milling	262/69	P. O. Box 160 Valmy, NV 89438 Phone: 775-635-2317 FAX: 775-635-2551 Web: http://www.goldcorp.com
MIN-AD Mine	MIN-AD, Inc.	S28, T35N, R38E	dolomite	OP, ML	mining grinding	20/4	P. O. Box 39 Winnemucca, NV 89446 Phone: 775-623-5944 FAX: 775-623-9028 Web: http://www.min-ad.com
Rainbow Ridge Opal Mine	Rainbow Ridge Opal Mines, Inc.	S22, 23, T45N, R26E	opalized wood precious opal	OP	mining	1	P. O. Box 97 Denio, NV 89404 Phone: (Summer) 775-941-0270 Phone: (Winter) 541-548-4810 Web: http://www.nevadaopal.com
Royal Peacock Opal Mine	Walter Wilson	S30, T45N, R26E	precious opal	OP	mining	1	P. O. Box 165 Denio, NV 89404 Phone: (Summer) 775-941-0374 Phone: (Winter) 775-272-3201 Web: http://www.royalpeacock.com
Turquoise Ridge Joint Venture	Barrick Gold Corp.	S33, T39N, R42E	gold silver	UG	mining	318/74	HC 66 Box 220 Golconda, NV 89414-9702 Phone: 775-529-5001 FAX: 775-529-0753 Web: http://www..barrick.com
Twin Creeks Mine	Newmont Mining Corp.	S3-10, 15-22, 27-32, T39N, R43E	gold silver	OP, HL, ML	mining heap leach milling	581	P. O. Box 69 Golconda, NV 89414 Phone: 775-623-4300 FAX: 775-635-4602 Web: http://www.newmont.com
LANDER COUNTY							
3D Pit	John Davis Trucking Co.	S2, T32N, R45E	sand gravel	OP, ML	mining screening	5	P. O. Box 457 Battle Mountain, NV 89820 Phone: 775-635-2805 FAX: 775-635-8017
Argenta Mill	Baker Hughes Drilling Fluids	S6, T32N, R47E	barite	ML	gravity grinding	19/8	P. O. Box 277 Battle Mountain, NV 89820 Phone: 775-635-5441 FAX: 775-635-5455 Web: http://www.bakerhughes.com
Argenta Mine	Baker Hughes Drilling Fluids	S13, 14, T32N, R46E; S18, 19, T32N, R47E	barite	OP	mining	16	P. O. Box 277 Battle Mountain, NV 89820 Phone: 775-635-5441 FAX: 775-635-5455 Web: http://www.bakerhughes.com
Battle Mountain Grinding Plant	M-I Swaco	S18, T32N, R45E	barite	ML	gravity grinding	33	P. O. Box 370 2 North Second Street Battle Mountain, NV 89820 Phone: 775-635-5135 FAX: 775-635-2645 Web: http://www.miswaco.com
Blue Ridge Mine	Jay and Grace Wintle	S19, 20, 29, 30, T28N, R47E	turquoise	OP	mining screening sorting	3	810 Sheep Creek Road Battle Mountain, NV 89820 Phone: 775-635-5231
Cortez Hills Mine	Barrick Cortez, Inc.	S31, T27N, R48E	gold	UG, ML	mining milling	799/384 (Combined Cortez Hills and Pipeline)	HC 66 Box 1250 Crescent Valley, NV 89821 Phone: 775-468-4400 FAX: 775-468-4496 Web: http://www.barrick.com
Cortez Pipeline Mine	Barrick Cortez, Inc.	S31, T28N, R47E	gold silver	OP, HL, ML	mining heap leach milling	799/384 (Combined Cortez Hills and Pipeline)	HC 66 Box 1250 Crescent Valley, NV 89821 Phone: 775-468-4400 FAX: 775-468-4496 Web: http://www.barrick.com
Greystone Mine	M-I Swaco	S35, T28N, R45E	barite	OP, ML	mining gravity	34	P. O. Box 370 2 North Second Street Battle Mountain, NV 89820 Phone: 775-635-5135 FAX: 775-635-2645 Web: http://www.miswaco.com

Directory of Mining and Milling Operations (continued)

MINE/MILL NAME	OPERATOR	LOCATION	COMMODITY	TYPE	ACTIVITY	COMPANY/ CONTRACT EMPLOYEES	ADDRESS
Mountain Springs Mine	M-I Swaco	S8, 9, T28N, R44E	barite	OP	stockpile	N/A	P. O. Box 370 2 North Second Street Battle Mountain, NV 89820 Phone: 775-635-5135 FAX: 775-635-2645 Web: http://www.miswaco.com
Phoenix Mine	Newmont Mining Corp.	S22, 27, 33, 34, T31N, R43E	gold silver copper	OP, HL, ML	mining heap leach	465	P. O. Box 1657 Battle Mountain, NV 89820 Phone: 775-635-6423 FAX: 775-635-6460 Web: http://www.newmont.com
LINCOLN COUNTY							
Tenacity Perlite Mine and Mill	Wilkin Mining and Trucking, Inc.	S34, T4S, R62E	perlite	OP, ML	mining crushing	7	HC 34 Box 199 Caliente, NV 89008 Phone: 775-728-4463 FAX: 775-728-4456
LYON COUNTY							
Adams Claim Gypsum Mine	Art Wilson Co.	S25, T16N, R20E	gypsum limestone	OP, ML	mining crushing grinding screening pelletizing	45	P. O. Box 20160 Carson City, NV 89702-1160 Phone: 775-882-0700 FAX: 775-882-0790 Web: http://www.awgypsum.com
Celite Plant	World Minerals, Inc.	S11, T20N, R24E	diatomite	ML	classification drying grinding milling	12	100 Front St. Fernley, NV 89408 Phone: 775-575-2536 FAX: 775-575-1570 Web: http://www.worldminerals.com
Dayton Materials	Granite Construction Co.	S23, T16N, R21E	aggregate sand	OP, ML	mining crushing screening washing	12	P. O. Box 2087 1900 Glendale Ave. Sparks, NV 89432 Phone: 775-355-3434 FAX: 775-329-2803 Web: http://www.graniteconstruction.com
Hazen Pit	EP Minerals, LLC	S6, 9, T19N, R26E	diatomite	OP	mining	2	640 Clark Station Rd. Sparks, NV 89434 Phone: 775-824-7700 FAX: 775-824-7715 Web: http://www.epminerals.com
Nevada Cement Mine	Nevada Cement Co.	S3-6, 9, T19N, R25E; S31-33, T20N, R25E	limestone	OP	mining	14	P. O. Box 840 Fernley, NV 89408 Phone: 775-575-2281 FAX: 775-575-4387 Web:http://www.eaglematerials.com
Nevada Cement Plant	Nevada Cement Co.	S10, 11, T20N, R24E	limestone clay	ML	crushing dry milling rotary kiln	107	P. O. Box 840 Fernley, NV 89408 Phone: 775-575-2281 FAX: 775-575-4387 Web:http://www.eaglematerials.com
MINERAL COUNTY							
Denton-Rawhide Mine	Kennecott Rawhide Mining Co.	S4, 5, 8, 16, 17, T13N, R32E	gold silver	OP, HL	heap leach	16/6	P. O. Box 2070 Fallon, NV 89407 Phone: 775-945-1015 FAX: 775-945-1213 Web: http://www.kennecottminerals.com
Esmeralda Mine	Antler Peak Gold, Inc.	S2-4, 7-11, 15-20, 29-32, T5N, R28E	gold silver	OP, HL	milling	24/29	P. O. Box 2570 Hawthorne, NV 89415 Phone: 775-546-5010
Lucky Boy Quarry	James Hardie Building Products Inc.	S34, T7N, R29E	quartzite	OP	mining	N/A	3000 Waltham Way Sparks, NV 89434 (775) 355-3000 Web: http://www.jameshardie.com
NYE COUNTY							
Ash Meadows Plant	Zeox Mineral Materials Corp.	S25, T18S, R50E	unaltered ash zeolite	ML	crushing screening packaging	5	HCR 70 Box 7006 East Spring Meadows Rd. Amargosa Valley, NV 89020 Phone: 775-372-5524 FAX: 775-372-5524 Web: http://www.zeoxcorporation.com

Directory of Mining and Milling Operations (continued)

MINE/MILL NAME	OPERATOR	LOCATION	COMMODITY	TYPE	ACTIVITY	COMPANY/ CONTRACT EMPLOYEES	ADDRESS
Beatty (D and H) Quarry	Kalamazoo Materials, Inc.	S16, T11S, R47E	landscape rock	OP, ML	mining crushing screening	N/A	6975 North Oracle Rd. Tucson, AZ 85704 Phone: 520-575-9601 FAX: 520-575-9604 Web: http://www.kalamazoomaterials.com
Cinder Cone Pit	Allied Building Materials, Inc./ Cind-R-Lite Company	S36, T14S, R48E; S31, T14S, R49E; S1, T15S, R48E; S6, T15S, R49E	cinder	OP, ML	mining screening	11	4745 Mitchell St. North Las Vegas, NV 89081 Phone: 702-651-1550 FAX: 702-651-1551 Web: http://www.abmnv.com
IMV Pits	Mud Camp Mining Co., LLC	S28, 29, T17S, R49E	clay	OP, ML	mining classification crushing grinding screening	28	HCR 70 Box 549 Amargosa Valley, NV 89020 Phone: 775-372-5341 FAX: 775-372-5640 Web: http://www.imvnevada.com
New Discovery Mine/ White Caps Mill	Vanderbilt Minerals Corp.	S13, 24, T12S, R46E; S18, 19, T12S, R47E	clay	OP, UG, ML	bagging grinding screening	9	3561 East Burgundy Dr. P. O. Box 6660 Pahrump, NV 89048 Phone: 775-537-6976 FAX: 775-537-6879 Web: http://www.rtvanderbilt.com
Pahrump Community Pit	Various (U. S. Bureau of Land Management manages pit)	S28, 29, T20S, R54E	sand gravel	OP	mining	N/A	Bureau of Land Management 4701 North Torrey Pines Dr. Las Vegas, NV 89130-2301 Phone: 702-515-5000 Web: http://www.blm.gov
Premier Chemicals	Premier Chemicals, LLC	S22, 23, 25-27, 34-36, T12N, R36E	magnesite	OP, ML	mining calcining sizing	85	P. O. Box 177 Gabbs, NV 89409 Phone: 775-285-2601 FAX: 775-285-4021 Web: http://www.premierchemicals.com
Round Mountain Mine (Smoky Valley Common Operation)	Round Mountain Gold Corp.	S19, 20, 29, 30, T10N, R44E	gold silver	OP, HL, ML	mining gravity heap leach milling	678/63	P. O. Box 480 Smoky Valley Mine Rd. Round Mountain, NV 89405 Phone: 775-377-2366 FAX: 775-377-3224 Web: http://www.kinross.com
Royston Claims	Dean and Danny Otteson	S36, T6N, R39E; S6, 8, T6N, R40E	turquoise	OP	mining	1	P. O. Box 564 Tonopah, NV 89049 Phone: 775-482-9889
South BLM Pit	Wulfenstein Construction Co.	S11, T20S, R53E	sand gravel	OP	mining crushing screening	7	2281 East Postal Dr. P. O. Box 38 Pahrump, NV 89048 Phone: 775-2-727-5900 FAX: 775-727-6010
PERSHING COUNTY							
Buff-Satin Mine	Vanderbilt Minerals Corp.	S2, T27N, R32E	clay	OP	bagging grinding screening	4	3561 East Burgundy Dr. P. O. Box 6660 Pahrump, NV 89048 Phone: 775-537-6976 FAX: 775-537-6879 Web: http://www.rtvanderbilt.com
Coeur Rochester Mine	Coeur Rochester, Inc.	S9-11, 15, 16, 21, 27, 28, T28N, R34E	silver gold	OP, HL, ML	mining heap leach milling	34	P. O. 1057 Lovelock, NV 89419 Phone: 775-273-7995 FAX: 775-273-7423 Web: http://www.coeur.com
Colado Mines	EP Minerals, LLC	S6, 7, 16, 18, 21, 25, T28N, R29E	diatomite perlite	OP, OS	mining	30	P. O. Box 959 150 Coal Canyon Road Lovelock, NV 89419 Phone: 775-824-7540 FAX: 775-824-7582 Web: http://www.epminerals.com
Colado Plant	EP Minerals, LLC	S33, T28N, R32E	diatomite perlite	ML	drying calcining classification grinding	87	P. O. Box 959 150 Coal Canyon Road Lovelock, NV 89419 Phone: 775-824-7540 FAX: 775-824-7582 Web: http://www.epminerals.com

Directory of Mining and Milling Operations (continued)

MINE/MILL NAME	OPERATOR	LOCATION	COMMODITY	TYPE	ACTIVITY	COMPANY/ CONTRACT EMPLOYEES	ADDRESS
Empire Quarry	United States Gypsum Co.	S31, T31N, R24E	gypsum	OP	mining	9	P. O. Box 130 Empire, NV 89405 Phone: 775-557-2341 FAX: 775-557-2212 Web: http://www.usg.com
Florida Canyon Mine	Florida Canyon Mining, Inc.	S1-4, 9-15, T31N, R33E; S37-39, T31.5N, R33E; S33-35, T32N, R33E	gold silver	OP, HL, ML	mining heap leach milling	138/30 (Combined Florida Canyon and Standard)	P. O. Box 330 Imlay, NV 89418 Phone: 775-538-7300 FAX: 775-538-7324 Web: http://www.jipangu.co.jp
Nassau (Section 8) Mine	American Colloid Co.	S8, T27N, R33E	clay	OP	mining shipping	0	P. O. Box 2010 Belle Fourche, SD 57717 Phone: 605-892-6371 FAX: 605-892-3178 Web: http://www.colloid.com
Standard Mine	Florida Canyon Mining, Inc.	S1, 12, T30N, R33E; S35, T31N, R33E	gold silver	OP, HL, ML	mining heap leach milling	138/30 (Combined Florida Canyon and Standard)	P. O. Box 330 Imlay, NV 89418 Phone: 775-538-7300 FAX: 775-538-7324 Web: http://www.jipangu.co.jp
W. Glen Sexton Family Trust	Nutritional Additives Corp.	S5, T34N, R38E	dolomite	OP, ML	mining milling	3	415 Wellington Street Winnemucca, NV 89445 Phone: 775-623-1151 FAX: 775-623-1153
STOREY COUNTY							
Sierra Stone Quarry and Plant	CEMEX	S26, 33, 34, T19N, R22E	aggregate	OS, ML	mining crushing screening	7	333 Galletti Way Reno, NV 89512 Phone: 775-342-0500 FAX: 775-342-0554 Web: http://www.cemexusa.com
Clark Mill	EP Minerals, LLC	S35, T20N, R22E	diatomite	ML	calcining classification drying grinding	54	640 Clark Station Rd. Sparks, NV 89434 Phone: 775-824-7700 FAX: 775-824-7715 Web: http://www.epminerals.com
Clark Mine	EP Minerals, LLC	S27, 33, 34, T20N, R23E	diatomite	OP	mining	12	640 Clark Station Rd. Sparks, NV 89434 Phone: 775-824-7700 FAX: 775-824-7715 Web: http://www.epminerals.com
WASHOE COUNTY							
CEMEX Paiute Pit and Plant	CEMEX	S2, 27, 34, T21N, R24E	sand gravel	OP	mining crushing screening	21	10 Hill Ranch Road Wadsworth, NV 89442 Phone: 775-575-1162
Empire Mill	United States Gypsum Co.	S11, 13, T31N, R23E	gypsum	ML	calcining crushing	92	P. O. Box 130 Empire, NV 89405 Phone: 775-557-2341 FAX: 775-557-2212 Web: http://www.usg.com
Lockwood Quarry	Granite Construction Co.	S17, T19N, R21E	aggregate	OP, ML	mining crushing screening washing	19	P. O. Box 2087 1900 Glendale Ave. Sparks, NV 89432 Phone: 775-355-3434 FAX: 775-329-2803 Web: http://www.graniteconstruction.com
Mustang Pit	Sierra Nevada Construction, Inc.	S4, T19N, R21E	aggregate	OP, ML	mining crushing screening	8	P.O. Box 50760 2055 East Greg St. Sparks, NV 89435-0760 Phone: 775-355-0420 FAX: 775-355-0535 Web: http://www.snc.biz
Rilite Aggregate	Rilite Aggregate Co.	S23, T18N, R20E	sand rock	OP, ML	mining crushing	6	3025 Mill St. Reno, NV 89502 Phone: 775-329-8842 FAX: 775-329-3593
Spanish Springs Quarry	Martin Marietta Materials, Inc.	S15, 22, T21N, R20E	aggregate decomposed granite	OP, ML	mining crushing screening	20	11059 Pyramid Lake Rd. Sparks, NV 89436 Phone: 775-425-4455 FAX: 775-425-5131 Web: http://www.martinmarietta.com

MINE/MILL NAME	OPERATOR	LOCATION	COMMODITY	TYPE	ACTIVITY	COMPANY/ CONTRACT EMPLOYEES	ADDRESS
Terraced Hill Clay Mine	Nevada Cement Co.	S13, 14, T27N, R19E	clay	OP, ML	mining milling	3	P. O. Box 840 Fernley, NV 89408 Phone: 775-575-2281 FAX: 775-575-4387 Web:http://www.eaglematerials.com
Tracy Pit	Western Nevada Materials	S27, 20N, 22E	sand gravel	OP	mining crushing	0/8	50 Freeport Blvd., No. 11 Sparks, NV 89431-6254 Phone: 775-359-9988
WHITE PINE COUNTY							
Bald Mountain Mine	Barrick Gold U. S., Inc.	S14, 15, 19, 20, T24N, R57E	gold silver mercury	OP, HL, ML	mining heap leach milling	186/20	P. O. Box 2706 Elko, NV 89803 Phone: 775-237-7100 FAX: 775-237-7101 Web: http://www.barrick.com
Mount Moriah Quarry	Mount Moriah Stone Quarries, LLC	S22, 23, 26, 27, 33-36, T16N, R70E	building stone landscape rock	OP	mining	24	P. O. Box 70 No. 10 Hatch Rock Rd. Baker, NV 89311 Phone: 435-855-2232 FAX: 435-855-2332 Web: http://mtmoriahstone.com
Robinson Mine	Robinson Nevada Mining Co.	S6, 8, 17, 18, T16N, R62E	copper gold silver molybdenum	OP, ML	mining milling	524	P. O. Box 382 Ruth, NV 89319 Phone: 775-289-7000 FAX: 775-289-7349 Web: http://www.quadramining.com

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